DEPARTMENT OF AGRICULTURE
MYSORE

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1926

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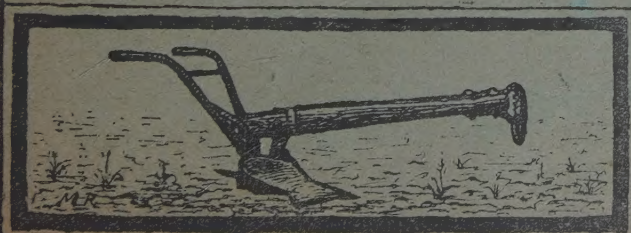

CONTENTS.

PAGE.

STAFF ... ... i—v

Suggestions for the Development of Agricultural Co-operation in Mysore—
K. H. Ramiah, B.A., Bar.-at-law, Registrar of Co-operative Societies in Mysore 1

A Note on the Work of the Well-Boring Section—
H. V. Visweswarayya, M.E., Well-Boring Engineer ... 5

Evil Effects of Communal Grazing—
C. Narasinga Raju, L. Ag., Agricultural Inspector ... 8

Active Immunisation against Rinderpest, in the Mysore State—
Major, R. W. Simpson. M.C.G., B.V.C. Superintendent, Civil Veterinary Department 12

The Coffee Borer—A foolish practice—
K. Kunhikannan, M.A., Ph. D., Entomologist 16

The Mysore Domestic Unit—
N. Rama Rao, B.A., B.L., Superintendent of Sericulture in Mysore. 20

Stamping out the Koleroga of Areca—
M. J. Narasimhan, B.A., Assistant Mycologist 25

Sunflower Trials—
W. Davison, B.S.A., Late Live-Stock Expert in Mysore ... 28

Our Manurial Problems—
B. Narasimha Iyengar, B.A., Ph.D., Agricultural Chemist ... 29

Harvesting Groundnuts—A new use for the stone threshing roller—
A. K. Yegnanarayana Iyer, M.A., Dip. Agric., N.D.D., F.C.S., Deputy Director of Agriculture 33

Black Rot or Koleroga of Coffee and its Control—
S. V. Venkatarayan, B.A., Assistant Mycologist 37

An Improved Jaggory Furnace—
G. S. Kulkarpad, B.A., Vice-Principal in charge, Hebbal Farm ... 44

Co-operative Experiments in Agriculture—
N. Venkatasubbiah, Secretary, the Mysore Agricultural and Experimental Union. 48

The Lending Library— 48
How to take and send samples of Soils and Manures for Analysis ... 48
How to send Diseased Specimens for Examination 49
Extract from Government Order regarding sale of One-year old Amrut Mahal Bull Calves 50
Rules for the Encouragement of Stock Breeding 51
Rahukalam and Gulikakalam 51
Publications of the Department of Agriculture in Mysore, Bangalore ... 52
Price List of Spare Parts for Holder sprayers 55
Price List of Implements and Spare Parts available at the Central Implement Depot, Bangalore 56

Monthly Notes—
A. K. Yegnanarayana Iyer, M.A., Dip. Agric., N.D.D., F.C.S., Deputy Director of Agriculture ... ...

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MYSORE AGRICULTURAL CALENDAR, 1926.

SUGGESTIONS FOR THE DEVELOPMENT OF AGRICULTURAL CO-OPERATION IN MYSORE.

THE primary purpose of Co-operation is economic and, in an essentially agricultural country like Mysore, Agricultural Co-operative Societies should necessarily form the bulk of Societies. In Mysore, out of a total number of 1474 Co-operative Societies at the end of June 1925, the number of Agricultural Societies was 1164. They had a membership of 48,835 and had collected a working capital of nearly 26 lakhs of rupees. Credit forms the backbone of the movement, and societies for promoting objects other than credit form a minority, being only 80. The reasons for this small progress in the development of non-credit agricultural co-operation are not far to seek. It is much easier among a backward, simple and illiterate population to start societies for credit than for production and distribution which involve much skill, knowledge of Business methods, etc.

As in other Provinces, in many societies in Mysore also, non-credit work is combined with credit. The membership in such cases being the same, even if different societies are organized, it is found to be of greater advantage to combine the several functions which they undertake in one and the same society, maintaining, of course, separate accounts. In a village, on account of the limited sphere of operations and the difficulty of finding suitable workers there is an immense advantage gained by combining credit and non-credit work in one and the same society. A beginning in this direction has been made in respect of the supply of agricultural requirements, such as, good seeds, implements, ploughs, manures, sugarcane mills and pans etc., to the raiyats and there are over a hundred rural credit societies now doing this non-credit work, besides the regular agricultural societies.

The special advantages accruing to the raiyat population from these supply societies are numerous. The aim of the Agricultural Department and of the Co-operative Societies is essentially identical, namely, the economic improvement of the agriculturists, who form the backbone of the country. The chief requirements of a raiyat besides cheap credit are good seeds, implements, manure etc. The Agricultural Department have carried on various experiments and arrived at definite results regarding the best kinds of ragi, paddy, sugarcane, potato seeds, and cotton seed which are most suitable for the soil and climate of Mysore and have been doing demonstration work on an extensive scale to popularize their use. They have also improved and manufactured a plough best suited for all soils of Mysore. The difficulty of obtaining reliable seeds at the right time was one of the chief obstacles confronting the raiyat and it is now overcome to a great extent. Unless the raiyats

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges			Nakshatrams in Ghaliges and Vighaliges		
									KRODHA–PUSHYA
G.	1	Friday ...	2	Bidige	...	8 44	Pushya	...	35 24
	2	Saturday ...	3	Tadige	...	13 36	Aslesha	...	41 58
	3	Sunday ...	4	Chouti	...	20 0	Makha	...	48 27
	4	Monday ...	5	Panchami	...	24 57	Pubba	...	54 28
	5	Tuesday ...	6	Shashti	...	29 15	Uttara	...	59 26
	6	Wednesday	7	Saptami	...	32 27	Hasta	...	60 0
	7	Thursday ...	8	Ashtami	...	33 27	Hasta	...	3 2
	8	Friday ...	9	Navami	...	35 10	Chitta	...	5 42
	9	Saturday ...	10	Dasami	...	33 30	Svati	...	7 20
	10	Sunday ...	11	Ekadasi	...	32 39	Visakha	...	7 20
	11	Monday ...	12	Dvadasi	...	29 42	Anoradha	...	6 24
	12	Tuesday ...	13	Trayodasi	...	25 46	Jeshta	...	4 28
	13	Wednesday	14	Chaturdasi	...	20 6	Moola	...	1 54
							Poorvashadha	...	56 56
G.	14	Thursday ...	30	● Amavasya	...	15 47	Uttarashadha	...	54 37
									MAGHA
	15	Friday ...	1	Padyami	...	104	Sravana	...	50 27
	16	Saturday ...	2–3	Bidige	...	4 10	Dhanishta	...	46 9
				Tadige	...	54 6			
	17	Sunday ...	4	Chouti	...	51 38	Satabhisha	...	42 14
	18	Monday ...	5	Panchami	...	47 7	Poorvabhadra	...	38 20
	19	Tuesday ...	6	Shashti	...	42 1	Uttarabhadra	...	35 15
	20	Wednesday	7	Saptami	...	37 49	Revati	...	33 11
	21	Thursday ...	8	Ashtami	...	35 30	Asvini	...	31 29
	22	Friday ...	9	Navami	...	33 40	Bharani	...	31 4
	23	Saturday ...	10	Dasami	...	32 23	Krittike	...	32 13
	24	Sunday ...	11	Ekadasi	...	33 41	Rohini	...	33 56
	25	Monday ...	12	Dvadasi	...	34 58	Mrigasira	...	37 36
	26	Tuesday ...	13	Trayodasi	...	38 49	Aridra	...	41 35
	27	Wednesday	14	Chaturdasi	...	42 50	Punarvasu	...	47 3
	28	Thursday ...	15	○ Pournami	...	47 57	Pushya	...	53 17
									MAGHA
	29	Friday ...	1	Padyami	...	53 21	Aslesha	...	59 53
	30	Saturday ...	2	Bidige	...	58 56	Makha	...	60 0
	31	Sunday ...	3	Tadige	...	60 0	Makha	...	6 29

MONTHLY NOTES.

Where tanks have received a good supply of water in the rains of the north-east monsoon and on lands under well cultivation, the fields will soon be sown with *vaisakhi* or summer paddy. Transplant your paddy in preference to sowing it broadcast. Considerable saving in seed can be effected especially if the seedlings are planted in twos and threes rather than in bunches of several seedlings. The water in the tanks which in the coming dry weather is liable to much loss by evaporation can be used economically by this method. Where water has to be raised from great depths, such saving is an important consideration. Transplanting

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows, Agricultural Exhibitions and other useful notes
NA YEAR.		
BAHULA		
Vaidruti ...	New Year's Day.	
Vishkambha ...	[a]Poorvashadha Rain 3rd pada	[b]Tornahalli, Malur Taluk.
[a]Preeti ...	[b]Chappalammana Jatre,	
Ayushman ...	Tornahalli.	
[b]Sowbhagya ...	[c]Poorvashadha Rain 4th pada	
[c]Sobhana ...	[d]Uttarashadha Rain 1st pada	[e]1. Sivaganga, Nelamangala
Atiganda ...	[c]Uttarayana Punyakala.	Taluk. 2. Nagalamudike,
Sukarma ...	Pongal, Solar eclipse Utta-	Pavagada Taluk. 3. Hen-
Dhriti ...	rashadha Rain 2nd pada,	nigepura, Anekal Taluk.
[d]Soola ...	Ranganathaswami Car	
Ganda, Vridhi ...	Festival, Seringapatam.	
Dhruva ...	[f]Sri Ramaswami Car Fes-	[f]Chunchanakatte, Yedatore
Vyaghata ...	tival, Chunchanakatte.	Taluk.
	[g]Mallikarjunaswamy Car Fes-	[g]Mudaktore, T.-Narsipur
[c]Harsha ...	tival, Mudaktore. Uttara-	Taluk. From 16-1-26 for 15
	shadha Rain 3rd pada.	days. Kallagurki, Srinivas-
	[h]Nallagangammana Jatre.	pur Taluk.
SUDDHA.		
[f]Vajra ...	[i]Sri Ranganathaswami Car	[h]Tavarekere (Cattle Fair),
[g]Siddhi ..	Festival.	Sira Taluk.
	[j]Chitravati Subrahmanya	[l]Cattle Fair, Honnenahalli,
[h]Vyatipata ...	Swami Car Festival, Hon-	Chikballapur Taluk.
[i]Varigha, Parigha ...	nenahalli.	[k]1. Hemagiri, Krishnaraj-
[j]Siva ...	[k]Ratha Sapthami, H. H. the	pete Taluk.
[k]Siddha ...	Maharaja's Installation	2. Kyamenahalli, Korata-
[l]Sadhya ...	Day, Sri Ranganathaswami	gere Sub-Taluk.
*Subha ...	Car Festival, Seringapatam	[l]3. Sri Yoga Narasimha-
[m]Sukla ...	[l]Uttarashadha Rain 4th pada	swami Cattle Fair at
Brahma ...	*Madhva Navami.	Gorur, Hassan Taluk.
Mahendra ...	[m]Sravana Rain 1st pada ..	[o](1) Vakkaleri, Kolar Taluk.
[n]Vaidruti ...	[n]Sravana Rain 2nd pada.	(2) Channagiri Kasaba Town.
Vishkambha ...	[o]Vyasa Pournami, Sri	(3) Harihar Kasaba Town.
[o]Preeti	Gangadhareswara Swami	(4) Bettadapur, Hunsur Tk.
	Car Festival, Gavipur,	(5) Tala Koil Betta, Sidla-
	Bangalore Taluk.	ghatta Taluk.
		(6) Anthraghatta, Kadur
BAHULA.		Taluk.
[p]Ayushman ...	[p]Sri Vallabharayaswami Car	Vasanthapur, Bangalore
[q]Sowbhagya ...	Festival, Vasanthapur.	Taluk.
Sobbana ...	[q]Sravana Rain 3rd pada ..	

will moreover give a better yield than broadcasting. Special manures for paddy are stocked in the Inspectors' depots; these are worth a trial.

Sow *bili jola* on black cotton soil, in tank beds with no water in them and under tanks with limited supplies of water, so as to have good fodder for cattle during the dry months.

Dry land fields should be left in a loosely stirred condition from now onwards through the hot weather till the beginning of the rains. Wherever the soil is soft enough to plough, it should be ploughed. If too hard for the plough, the disc-harrow should be used for the purpose. *Vide* notes under December for details.

make use of the help of the Agricultural Department for their requirements and take advantage of their advice and help, they will find it difficult, in the future, to adjust their business to the changing conditions of rain fall, market price etc. The raiyats are too conservative to change their methods and habits of work all at once. They obtain seeds for growing their crops from the grain dealers, without caring for the quality, because it is the only supply to which they are accustomed and which is readily available. People have begun to understand that village Co-operative Societies are providing facile credit to agriculturists and they are beginning to appreciate their help. In order to bring about a change in their methods and popularize the good results of the Agricultural Department, the Rural Co-operative Societies should undertake the supply of seeds, ploughs, manure etc., recommended by the Department of Agriculture as being most useful and profitable to the raiyats and make them readily available to their members at the proper seasons. The Societies should make enquiries of each member as to what quantities of each article he would require, and after consolidating the indents received from all members, send a requisition to the Agricultural Department for the supply of all articles required by them in a particular season. The societies should indent for these articles well in time before the sowing season commences, so that they may get them from the Agricultural Department at the proper time. One distinct advantage in this is that the quality of articles supplied is guaranteed ; another advantage is that they can be had for a cheap price. The Agricultural Department produces large quantities of seed or purchases them largely after inspection and so, the prices are wholesale prices. Further, it allows 5 per cent commission on its sales to the Co-operative Societies to cover the incidental charges, such as, freight, etc.

Another important advantage is the free supervision and advice that the Departmental Officers would give to the raiyats that obtain their requirements through the Department. For stocking these articles, money will be necessary. Every society should set apart a portion of its reserve fund for this purpose. A small loan may also be obtained from the Apex Bank at Bangalore which will be glad to give loans readily for all agricultural purposes without the formalities of an elaborate enquiry.

Government have also sanctioned a sum of Rs. 8,000 at the rate of Rs. 1,000 for each district with a view to encourage the development of agricultural co-operation and distribution of agricultural implements, seeds, manures etc., to cultivators on an extensive scale through Co-operative Societies and placed it at the disposal of the Registrar of Co-operative Societies for granting loans to such of the Co-operative Societies as are not in a position to find their own funds for the purpose of purchasing and stocking seed etc. The Apex Bank will readily advance small loans for this purpose on knowing the requirements of each society beforehand. Thus even small rural societies can stock these agricultural requirements and supply them to all the raiyats in the villages served by them.

Next in importance in non-credit agricultural co-operation are Sale Societies, *i.e.*, societies for the sale of produce grown by members in profitable markets. The aim of these societies is primarily to get rid of the middlemen who are responsible for the small price realized by the raiyats for their produce. There is a large difference between the bazaar rates of certain commodities published periodically in the news

papers, the Gazette, the Chamber of Commerce Market Report, etc., and the prices actually realized by the producers. This difference is usually high and sometimes it amounts to nearly 50 per cent. It actually represents the middleman's profits, storage and transport charges, etc. These charges are legitimate so long as they are not exorbitant. But the difficulty often arises when the cultivator is in debt to the middleman and is forced to sell his produce through him. Human nature being what it is, the middleman naturally fixes a comparatively low price for the produce as he takes the risk of waiting for a proper time to sell it to his advantage, and thus, the cultivator gets very much less than what is rightly due to him. The middleman's exorbitant profits can be saved by the organization of Co-operative Societies for the sale of agricultural produce. Such societies will collect the produce of its members and sell it at the best prices in the open market instead of each cultivator selling it to a small merchant or middleman. For doing all this kind of work, honest and energetic workers well acquainted with the conditions of trade variations, and market prices are necessary. In villages it is difficult to get many such men. For the present, the credit societies can help their members in this direction to a great extent. Generally the various crops grown by the agriculturists are brought to the market immediately after harvest. As all the people bring them at the same time after harvest, naturally the price will be low. The agriculturists are not in a position to withhold the stocks from sale even for a short time, as they require money for various urgent purposes, such as, paying kandayam, meeting family expenditure, etc. The rural societies should undertake to advance loans to members on the security of the crops and arrange to sell the produce some time after harvest when the prices in the market are a little higher and more favourable. By doing this kind of work, the societies will be helping their members a great deal in enabling them to get better prices for the crops which they have grown by the sweat of their labour. The stock thus withheld may either be sold by the members themselves or by the society at the proper season when the prices are high. If it undertakes this work, it will have to make arrangements for grading the varieties, etc.

A small beginning has been made in the Sagar Taluk for the sale of Areca grown by members of societies, and their work is yet in the experimental stage. There seems to be large scope for the formation of societies for the sale of copra at Tiptur, cardamoms at Saklespur and of cotton in the Chitaldrug District. The Co-operative Cotton Sale Societies in the Southern Division of the Bombay Presidency are reported to be doing excellent work and there ought to be similar scope for the formation of such societies in the cotton-growing areas of the Mysore State. The Departments of Agriculture and Co-operation are ready to give all the technical advice required for the organization and working of such societies on right lines.

A NOTE ON THE WORK OF THE WELL BORING SECTION.

The rain fall in Mysore State is an uncertain factor and agriculture has to depend to a large extent on the water supply from wells for irrigation and garden purposes. Mysore being a table land 2,000 to 3,000

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges		Nakshatrams in Ghaliges and Vighaliges	
							MAGHA
	1	Monday ...	3	Tadige	... 3 51	Pubba	... 12 30
	2	Tuesday ...	4	Chouti	... 7 56	Uttara	... 17 41
	3	Wednesday ..	5	Panchami	... 10 59	Hasta	... 21 52
	4	Thursday ...	6	Shashti	... 12 46	Chitta	... 24 52
	5	Friday ...	7	Saptami	.. 13 18	Svati	... 26 36
	6	Saturday ...	8	Ashtami	... 12 30	Visakha	... 27 5
	7	Sunday ...	9	Navami	... 10 36	Anoradha	... 26 25
	8	Monday ...	10	Dasami	... 7 31	Jeshta	... 24 43
	9	Tuesday ...	11-12	Ekadasi	... 3 29	Moola	... 22 5
				Dvadasi	... 55 40		
	10	Wednesday...	13	Trayodasi	... 53 36	Poorvashadha	... 18 48
G.	11	Thursday ...	14	Chaturdasi	... 47 47	Uttarashadha	... 15 0
	12	Friday ...	30	● Amavasya	... 41 48	Sravana	... 10 57
							PHALGUNA
	13	Saturday ...	1	Padyami	... 35 14	Dhanishta	... 6 53
	14	Sunday ...	2	Bidige	... 30 2	Satabhisha	... 2 41
						Poorvabhadra	... 56 2
	15	Monday ...	3	Tadige	... 24 49	Uttarabhadra	... 55 26
	16	Tuesday ...	4	Chouti	... 18 48	Revati	... 52 10
	17	Wednesday ..	5	Panchami	... 16 15	Asvini	... 57 5
	18	Thursday ...	6	Shashti	... 13 21	Bharani	... 50 26
	19	Friday ...	7	Saptami	... 11 30	Krittike	... 50 54
	20	Saturday ...	8	Ashtami	... 10 54	Rohini	... 52 40
	21	Sunday ...	9	Navami	... 11 31	Mrigasira	... 55 38
	22	Monday ...	10	Dasami	... 13 31	Aridra	... 60 0
	23	Tuesday ...	11	Ekadasi	... 16 27	Aridra	... 0 45
	24	Wednesday...	12	Dvadasi	... 20 53	Punarvasu	... 5 40
	25	Thursday ...	13	Trayodasi	... 25 48	Pushya	... 11 40
	26	Friday ...	14	Chaturdasi	... 31 10	Aslesha	... 18 10
M. H.	27	Saturday ...	15	OPournami	... 36 30	Makha	... 24 46
							PHALGUNA
M.	28	Sunday ...	1	Padyami	... 41-27	Pubba	... 30 56

MONTHLY NOTES.

In making preparations for threshing, it is well to remember that this slow and tedious work can be done much more quickly and with less trouble and worry by adopting better methods than those commonly employed. Firstly, a stone threshing roller $2\frac{1}{2}'$ long by 2' high, of the kind now coming into use in

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows, and Agricultural Exhibitions and other useful notes
BAHULA.		
Atiganda ...	Sri Narasimha Swami Car	
[a]Sukarma ...	Festival, Sibi, Tumkur	
Dhriti ...	Taluk.	
Soola ...	[a]Sravana Rain 4th pada.	
Ganda	Dhanishta Rain 1st pada.	
Vridhi ...		
Dhruva ...	[b]Dhanishta Rain 2nd pada	
[b]Vyaghata ...	Smartha Ekadasi.	
Harsha, Vajra ...	Vaishnava Ekadasi.	
	[c]Maha Siva Ratri, Sri Bhoga	[c]Avani, Mulbagal Taluk.
Siddhi ...	Nandeswara Swami Car	Nandi, Chikballapur Taluk.
[c]Vyatipata ...	Festival, Nandi.	
Varigha ...	Dhanishta Rain 3rd pada.	Sulekere, Channagiri Taluk.
SUDDHA.		
Parigha ...	[d]Dhanishta Rain 4th pada.	[e]Yedwar, Srinivaspur
Siva ...	[e]Sri Kasi Visweswara	Taluk.
[d]Siddha ...	Swami Car Festival.	[g]Doddasaggere, Koratagere
[e]Sadhya ...	[f]Satabhisha Rain 1st pada.	Sub-Taluk. Cattle Fair for
Subha Sukla ...	[g]Sri Narasimha Swami Car	7 days.
[f]Bhrahma ...	Festival, Doddasaggere.	[j]Nandagudi, Malebennur
[g]Mahendra ...	[h]Satabhisha Rain 2nd pada.	Hobli, Harihar Sub-Taluk.
Vaidruti ...	[i]Dundina Marammana Jatra,	Cattle Fair at Maddagiri
Vishkamba ...	Maddagiri Town.	Town from 23-2-26 to
[h]Preeti ...	[j]Sri Gopalakrishna swami	5-3-26.
[i]Ayushman ...	Car Festival, Thondanoor,	
Sowbhagya ...	Mandya Taluk.	
[j]Sobhana ...	[k]Satabhisha Rain 3rd pada.	[l](1) Deva Raya Durga,
[k]Atigunda ...	[l]Holi Feast. Shab-e-Barat	Tumkur Taluk.
[l]Sukarma ...	Sri Narasimha Swami Car	(2) Suggenahalli, Magadi
	Festival Deva Raya Durga	Taluk.
	Sri Chenna Raya Swami	(3) Agara, Bangalore Taluk.
	Car Festival, Agara, Ban-	(4) Nandihalli, Srinivas-
BAHULA.	galore Taluk.	pura Taluk.
		(5) Mittimari, Bagepalli
Dhriti ...	Satabhisha Rain 4th pada.	Taluk.
	Shab-e-Barat.	

many parts of the State is a very good appliance and is well within the means of the ordinary raiyat. It does the work quicker and with less labour, and can be used for threshing ragi, jola, avare, togari, or hurali. Those wishing to plant the now popular Red Mauritius and other new varieties of sugar-cane should plant them this month if not earlier. *Vide* notes under November.

feet above sea level, even the underground supply is not plentiful and gets easily exhausted when heavily drawn upon, especially, in years of bad rainfall. In such places as the Madras Presidency on the contrary, at almost the sea level, it is stated that there are numerous wells that can easily stand a 3" centrifugal pump giving a continuous yield of roughly 10,000 gallons per hour or more. It is doubtful if there are many wells in the Mysore State that are capable of doing this.

Another cause for the difficulty experienced by the raiyats here in the well irrigation is that when sinking the wells in the first instance the only means available at their disposal for un-watering the same is by two or three picotahs or mhotes and as the inflow at the time becomes too heavy to be dealt with by this means they are forced to start revetment and complete the well. The majority of the wells in the Mysore State are sunk under these conditions with the result that in a bad season, as the level of this sub-soil water goes down, the well naturally fails. It is then too late to do anything as the revetment has been completed, and the well becomes useless.

The Well Boring Section was formed in 1924 as a separate section of the Agricultural Department for the purpose of helping agriculturists to sink their wells at a minimum cost and with minimum risks to a proper depth so that a satisfactory supply of water may be obtained. This help is primarily intended for agricultural and drinking water wells but can also be given for wells for other purposes under special terms. The help that this section can render to the public would be that we shall be able to send an Officer to inspect the party's lands with the object of picking out likely sites for wells.

We shall be able to send a boring outfit to ascertain at what depth an assured supply of water is likely to be struck either in rock or earth. The boring plant will have to be transported at the party's expense from and to Bangalore. The boring will be done under the supervision of a Departmental Officer but the party will have to supply the actual cooly labour for working the machine. A rough estimate of the cost of such boring operation will be given beforehand. Of course, boring through rock will be much more costly than through earth approximating Rs. 6 to 12 per foot according to the hardness of the rock.

As a result of such boring, we shall be able to give an estimate of the probable cost of sinking a well to a depth required to give an assured supply. We shall also be able to tell how such a well should be sunk to avoid collapse and give such other information.

Should it be necessary to pump out the water from the well so as to enable the party to get down to the permanent water-bearing level, we shall be able to lend a portable pumping plant for the purpose at a rate to cover the cost of operation.

The equipment in this section being at present limited, the applications for boring and pumping outfits can only be dealt with in rotation. All the sets at the disposal of this section are engaged and would not be free for some time to come.

EVIL EFFECTS OF COMMUNAL GRAZING.

Communal system of grazing cattle is prevalent in villages where there are common grazing lands (Gomala). The Villagers follow this system because it is easy and convenient, since a few boys can look after

the whole village cattle. But rarely we find raiyats allowing their plough and cart bullocks to mix up with the village herd, and graze on the Gomala, because they know very well, that if they did so, the animals get very little grazing and run down in condition. If this system is bad for the working bullocks, it is also bad for the bulls, cows and young stock of the village. The latter classes of cattle require, if not more, as much attention and care in feeding and management, as the working cattle. Some of the chief reasons why communal grazing is an impediment to the improvement and welfare of the village cattle are discussed below.

Invariably there is over-grazing of the Gomala. Wherever there is gomala, the people are tempted to keep more cattle than they can properly provide for, with the result that there are many more cattle on the gomala than it could support, and consequently cattle are half-starved and emaciated. Very often it is said by raiyats that they keep more cattle than they can properly take care of, just for the sake of producing manure. But they do not seem to know that manure from well nourished cattle is richer and better for the land than from poorly nourished cattle.

Gomala is often the barest patch in the village. Why? Because it is every-body's land and therefore nobody's land. None cares to help the grass to grow on it. Neither is it cultivated nor are the cattle kept off, when the grass is tender and growing. By frequent trampling of the ground by the cattle it gets hard and the grass has a struggle to grow. When it is treated so indifferently, how could we expect it to maintain all the village cattle in good condition?

When the cattle are poor in condition, the ill effects therefrom are sure to follow. Cows in milk and in calf, need good grazing and rest, even more than the working cattle. If they have to wander in search of food troubled by old dry cows and young stock, how can they get this rest? The milk yield diminishes and the calf in the womb is not properly developed. When the cows are poor in condition, they do not come into season regularly and remain dry for a very long time. The village cows generally give one calf in two years or even once in three years. Chiefly because of insufficient feeding and care, young calves for want of sufficient food and careful tending instead of growing into strong and sturdy bulls and cows get stunted and weak in constitution.

More than the evils mentioned above, the serious ill effects of communal grazing are :—

(1) Impossibility of controlling breeding.
(2) Spread of diseases.

(1) In the village herd, there are generally some immature, uncastrated or improperly mulled bull calves of a very undesirable kind for breeding purposes. When the cattle are out for grazing together on the gomala it is impossible to prevent cows in season from being covered by such animals and consequently the cows breed poor, weakly and mongrel calves. No village can hope to improve its cattle or possess a good strain of cattle if the undesirable scrub male stock and cows are sent out together for grazing and allowed to breed indiscriminately. Every raiyat should remember that a good bull is half the herd.

(2) Why do contagious diseases like rinderpest, foot and mouth disease run so quickly through the village cattle? It is because prompt

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges			Nakshatrams in Ghaliges and Vighaliges		
							PHALGUNA		
	1	Monday ...	2	Bidige	... 45	29	Uttara	... 36	28
	2	Tuesday ...	3	Tadige	... 48	31	Hastha	... 40	54
	3	Wednesday	4	Chouti	... 50	18	Chitta	... 44	14
	4	Thursday ...	5	Panchami	... 50	41	Svati	... 46	16
	5	Friday ...	6	Shashti	... 49	48	Visakha	... 47	2
	6	Saturday ...	7	Saptami	... 47	41	Anoradha	... 46	39
	7	Sunday ...	8	Ashtami	... 44	25	Jeshta	... 45	9
	8	Monday ...	9	Navami	... 40	10	Moola	... 42	40
	9	Tuesday ...	10	Dasami	... 35	16	Poorvashadha	... 39	29
	10	Wednesday	11	Ekadasi	... 29	22	Uttarashadha	... 35	42
	11	Thursday ...	12	Dvadasi	... 23	41	Sravana	... 31	40
	12	Friday ...	13	Trayodasi	... 17	42	Dhanishta	... 27	24
	13	Saturday ...	14	Chaturdasi	... 11	54	Satabhisha	... 23	15
	14	Sunday ...	30	●Amavasya	... 6	11	Poorvabhadra	... 19	28
							AKS ADHIKA CHAITRA		
G.	15	Monday ...	1–2	Padyami Bidige 0 20		55 2	Uttarabhadra	... 15	51
	16	Tuesday ...	3	Tadige	... 51	22	Revati	... 13	50
	17	Wednesday	4	Chouti	... 49	6	Asvini	... 11	35
	18	Thursday ...	5	Panchami	... 47	46	Bharani	... 11	6
	19	Friday ...	6	Shashti	... 47	40	Krittike	... 11	50
	20	Saturday ...	7	Saptami	... 48	47	Rohini	... 13	47
	21	Sunday ...	8	Ashtami	... 51	3	Mrigasira	... 16	53
	22	Monday ...	9	Navami	... 54	15	Aridra	... 21	0
	23	Tuesday ...	10	Dasami	... 58	12	Punarvasu	... 25	57
	24	Wednesday	11	Ekadasi	... 60	10	Pushyami	... 31	31
	25	Thursday ...	11	Ekadasi	... 2	47	Aslesha	... 37	29
	26	Friday ...	12	Dvadasi	... 7	30	Makha	... 43	33
	27	Saturday ...	13	Trayodasi	... 12	9	Pubba	... 49	25
	28	Sunday ...	14	Chaturdasi	... 16	27	Uttara	... 54	51
	29	Monday ...	15	○ Pournami	... 20	11	Hasta	... 59	35
							ADHIKA CHAITRA		
	30	Tuesday ...	1	Padyami	... 23	5	Chitta	... 60	10
	31	Wednesday	2	Bidige	... 25	30	Chitta	... 3	50

MONTHLY NOTES.

The month for cane milling. Note that with the same amount of cane, a bigger money return can be obtained by the use of better mills which extract more juice, and by better methods of boiling jaggery whereby a firm and light coloured jaggery fetching a higher price can be got. Use the Nahan bullock mill, or, if possible, an engine-driven mill for milling. Use red litmus paper to judge liming and a good skimming ladle to remove

Counties	Places, Professional Opportunities and Business and Industrial Activities in Agriculture	Places of Public Resort, Public Houses and Agricultural Associations and other useful notes.
Australia.		
Perth	The Perth Agricultural Show	
Albany	Annual Exhibition of Agricultural Products	
Fremantle	Agricultural Show	
Geraldton	Agricultural Show	
Kalgoorlie	Agricultural Show	
Northam	Agricultural Show	Agricultural Hotel
Bunbury	Agricultural Show	Bunbury Hotel, Esplanade Hotel
Busselton	Agricultural Show	
Collie	Agricultural Show	
Katanning	Agricultural Show	
Narrogin	Agricultural Show	
Northam	Agricultural Show	
Pingelly	Agricultural Show	
Wagin	Agricultural Show	
Wongan Hills	Agricultural Show	
York	Agricultural Show	York Hotel
NEW S. WALES.		
Sydney.		
Bathurst	Agricultural Show	
Blayney	Agricultural Show	
Cowra	Agricultural Show	
Forbes	Agricultural Show	
Grenfell	Agricultural Show	
Molong	Agricultural Show	
Orange	Agricultural Show	
Parkes	Agricultural Show	
Wellington	Agricultural Show	
Young	Agricultural Show	
Goulburn	Agricultural Show	
Berrima	Agricultural Show	
Bowral	Agricultural Show	
Moss Vale	Agricultural Show	
Mittagong	Agricultural Show	
Picton	Agricultural Show	
Robertson	Agricultural Show	
Wingello	Agricultural Show	
Albury	Agricultural Show	
Corowa	Agricultural Show	
Deniliquin	Agricultural Show	
Wagga	Agricultural Show	
VICTORIA.		
Melbourne	Royal Show, 1st Week	
Ballarat	Agricultural Show	
Bendigo	Agricultural Show	
Castlemaine	Agricultural Show	
Echuca	Agricultural Show	
Kyneton	Agricultural Show	
Maryborough	Agricultural Show	
Seymour	Agricultural Show	
Shepparton	Agricultural Show	
Stawell	Agricultural Show	
Swan Hill	Agricultural Show	
Wangaratta	Agricultural Show	
Warrnambool	Agricultural Show	
Wodonga	Agricultural Show	
Yarrawonga	Agricultural Show	
Dimboola	Agricultural Show	
Horsham	Agricultural Show	
Nhill	Agricultural Show	
Stawell	Agricultural Show	
Ararat	Agricultural Show	
Hamilton	Agricultural Show	
Portland	Agricultural Show	
Warrnambool	Agricultural Show	
Colac	Agricultural Show	
Geelong	Agricultural Show	
Leongatha	Agricultural Show	
Sale	Agricultural Show	
Traralgon	Agricultural Show	
Warragul	Agricultural Show	
Wonthaggi	Agricultural Show	
TASMANIA.		
Launceston	Agricultural Show	
Hobart	Agricultural Show	

On dry land fields, the best of the local varieties of cereals will be found to suit any locality, and also to give good returns especially from experiments, trials or observation plots sown.

On garden lands, i.e., those well cultivated, where vegetables crops like beans, cucumber, melons, etc., can be grown, which will be removed in time to prepare and get the land ready for the next main season crop of tomatoes, cucumbers, or potatoes.

steps are not taken to separate the infected animals from the village herd, and consequently the diseases spread rapidly through the whole herd causing general loss to the village.

To overcome the ill effects arising out of communal grazing, the following suggestions are offered.—

(1) By limiting the number of cattle kept to a number that gomala could support during normal years, the village cattle may have sufficient grazing.

(2) The production of grass can be increased by careful and timely cultivation of the gomala, and keeping off the cattle from grazing the grass before it is fully grown.

(3) Fodder crops should be raised on patta lands and preserved to feed the cattle when the grazing is short or when the grass is growing on the gomala. The best method of preserving green fodder is by ensiling. Particulars of this method of preservation can be obtained from the Agricultural Inspectors.

(4) By encouraging maintenance of pastures by individual raiyats for their own use, over-crowding on the gomala may greatly be relieved.

(5) By dividing the gomala into convenient blocks having fence all round for grazing different classes of cattle; and by prompt castration of all undesirable male stock, indiscriminate breeding can be put an end to. The cows will yield more milk and breed regularly. The operation of castration is safe and sure and there are Veterinary Inspectors in every district who do this operation free of cost.

(6) When epidemics breakout, the infected animal should be separated from the village herd and the matter immediately reported to the Veterinary Inspector who will render all possible and necessary help to prevent the disease from spreading.

The measures suggested above can easily be carried out by co-operation of the villagers. If some such steps as these are not taken early to combat the evil effects of communal grazing, the sooner the gomala ceases to exist, the better it would be. This is a problem for the Village Panchayet to tackle and solve. For centuries, cattle have been the cheapest motive power in Indian agriculture, and will continue to be so for years to come. Therefore, anything connected with the improvement of cattle should be of the utmost importance to the raiyat.

ACTIVE IMMUNISATION AGAINST RINDERPEST IN THE MYSORE STATE.

Active Immunisation against rinderpest has been undertaken from time to time in the Mysore State, on the Rayankere Dairy Farm, and in a few villages, but it was not found practicable to undertake it on an extensive scale till August this year, when Government sanctioned an additional staff to cope with the large number of outbreaks. In the month of April, rinderpest appeared among the cattle at the Harihar and Kudli Cattle Fairs. At each of these fairs, over 20,000 head of cattle had collected; and as there is no legislation in the State to prevent the movement of cattle from affected areas or to segregate them, the

disease was carried from these fairs to villages in five districts in the State, and in a short while over 600 villages were affected. With so many villages close to one another being affected, as also several of the taluk headquarter towns, and with the constant unrestricted cart traffic between the villages and towns, Passive Immunisation was found to serve no purpose. Villages where the disease had been suppressed, soon became re-infected further; with these large number of outbreaks, the staff were not always able to revisit villages within ten days for reinoculation, and in case where they were able to do so, it was found almost impossible to make the cattle owners understand that the immunity conferred by Passive Immunisation only lasts nine days, and to induce them to allow their cattle to be reinoculated. The result was that in a large number of cases the cattle not having been reinoculated became affected after the period of immunity had passed, and the people naturally began to lose confidence in inoculation. It was then decided to discontinue Passive Immunisation, and to introduce Active Immunisation at all risks, though the serum in stock at the time was only for Passive Immunisation. The few men, who had some experience in Active Immunisation, were deputed to instruct the others in the method, and as soon as the Veterinary Inspectors felt confident that they could undertake Active Immunisation independently, they were sent out in pairs to do the work, with very satisfactory results notwithstanding the fact that several of them had only recently left College. Within the last three months 6,954 head of cattle have been protected by Active Immunisation in 49 villages, and with only 6 deaths against a mortality of 516 out of 1,301 attacks among the uninoculated in the villages in question.

In one taluk headquarter, with a Cattle Census of 1908 notwithstanding that Passive Immunisation had been undertaken four times in two months, the disease still continued; and although only 412 cattle were protected by Active Immunisation, it was quite sufficient for the purpose, as those animals, that had not had the disease and were not produced for inoculation, soon became affected in large numbers. In a short while, every animal left in the town had either been protected or had contracted the disease by natural infection. The same thing occurs in villages where there are factions, and where Active Immunisation is undertaken. The cattle, not produced by one faction for immunisation, invariably get affected, as the risk of contagion is greater in a village where natural infection already exists, and where 50 per cent of the cattle are actively immunised This serves as an excellent object lesson to those of the people, who being opposed to inoculation, refuse to have their animals protected. It has also been observed in those parts, where Active Immunisation has been undertaken, and where the mortality among the unprotected, has been high, that the people have realised the efficacy of Active Immunisation and are anxious for it even in unaffected villages.

The using of serum, intended for Passive Immunisation, for Active Immunisation, naturally resulted in 50 per cent of those protected showing reaction, with diarrhoea following in about 10 per cent of the cases.

It is necessary to have a small virus producing station for furnishing a ready supply of virus, as the staff are often handicapped in not being able to get a typical case to draw blood from; besides people are averse to having their cattle bled.

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakshatrams in Ghaliges and Vighaliges
					ADHIKA CHAITRA
C	1	Thursday ...	3	Tadige ... 25 41	Svati ... 5 50
G.	2	Friday ...	4	Chouti ... 25 9	Visakha ... 7 19
	3	Saturday ...	5	Panchami ... 23 21	Anoradha ... 7 35
	4	Sunday ...	6	Shashti ... 20 22	Jeshta ... 6 39
	5	Monday ...	7	Saptami ... 16 16	Moola ... 4 36
					Poorvashadha ... 56 20
	6	Tuesday ...	8	Ashtami ... 11 16	Uttarashadha ... 55 3
	7	Wednesday	9-10	Navami ... 5 32	Sravana ... 53 28
				Dasami ... 53 49	
	8	Thursday ..	11	Ekadasi ... 52 47	Dhanishta ... 48 55
	9	Friday ...	12	Dvadasi ... 46 17	Satabhisha ... 44 21
	10	Saturday ...	13	Trayodasi ... 40 10	Poorvabhadra ... 40 6
	11	Sunday ...	14	Chaturdasi ... 34 37	Uttarabhadra ... 36 26
	12	Monday ...	30	● Amavasya ... 29 52	Revati ... 33 44
					NIJA CHAITRA
H.	13	Tuesday ...	1	Padyami ... 26 6	Asvini ... 31 41
	14	Wednesday	2	Bidige ... 23 28	Bharani ... 30 57
M.	15	Thursday ...	3	Tadige ... 22 5	Krittike ... 30 58
	16	Friday ...	4	Chouti ... 21 50	Rohini ... 33 5
	17	Saturday ...	5	Panchami ... 22 52	Mrigasira ... 35 56
H.	18	Sunday ...	6	Shashti ... 25 0	Aridra ... 39 50
	19	Monday ...	7	Saptami ... 28 58	Punarvasu ... 44 38
	20	Tuesday ..	8	Ashtami ... 32 22	Pushya ... 50 3
H.	21	Wednesday	9	Navami ... 36 19	Aslesha ... 56 0
	22	Thursday ...	10	Dasami ... 40 56	Makha ... 60 10
	23	Friday ...	11	Ekadasi ... 45 32	Makha ... 2 5
	24	Saturday ...	12	Dvadasi ... 49 49	Pubba ... 8 0
	25	Sunday ...	13	Trayodasi ... 53 29	Uttara ... 13 29
	26	Monday ...	14	Chaturdasi ... 56 22	Hasta ... 18 19
	27	Tuesday ...	15	O Pournami ... 58 33	Chitta ... 22 19
					NIJA CHAITRA
	28	Wednesday	1	Padyami ... 58 52	Svati ... 25 13
	29	Thursday ...	2	Bidige ... 58 19	Visakha ... 27 2
	30	Friday ...	3	Tadige ... 66 26	Anoradha ... 27 34

MONTHLY NOTES.

The *pattapatti* variety of sugar-cane is a very superior local cane both in the yield of cane per acre and in the quantity of sugar present in the juice; whenever possible, plant this variety in preference to others. But new varieties which are more vigorous and better yielding are now available. These are H. M. 544; H. M. 312; H. M. 310; Red Mauritius and J. 33-A. These should be planted from November to February, as they are likely to arrow about the month of November, and canes planted after February will not give a large tonnage owing to the cessation of growth after arrowing. Applications for seed setts should be made to the Deputy and Assistant Directors who will arrange to procure them from the centres nearest to the applicants.

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
BAHULA.	[a]Easter Holidays 1st to 6th [b]Good Friday. [c]Revati rain, 2nd pada.	
[a]Harsha Vajra ...	[d]Revati rain 3rd pada,	[h]Cattle show at Kudli, Shimoga Taluk, for 10 days.
[b]Siddhi ...	[e]Smartha Ekadasi.	[i]Cattle Fair at Burdugunte, Sidlaghatta Taluk.
[c]Vyatipata ...	[f]Vaishnava Ekadasi, Revati rain 4th pada,	[j]Varnasi, Kolar Taluk.
Varigha ...	[g]Tamil New Year's Day,	[k]Cattle Fair at Anekal Town
Parigha ...	[h]Asvini rain 1st pada,	[l]Muddenahalli, Channagiri Taluk.
[d]Siva ...	[h]Sri Sangameswara Swami Jatra, Kudli.	[m]Byrappanahalli, Nelamangala Taluk.
Sidha ...	[i]Khutba-e-Ramzan, Gangammana Jatra.	[n]Chikka Thirupathi, Malur Taluk.
[e]Sadhya ...	[j]Asvini rain, 2nd pada ...	Melur, Siddlaghatta Taluk.
[f]Subha ...	[k]Sri Ramanujacharya Tirunakshatra, Eralappana Jatre, Varanasi.	Thirumale, Magadi Taluk.
Brahma ...	[l]Sri Thimma Raya Swami Car Festival.	Jalaganahalli, Malur Taluk.
Mahendra ...	[m]Asvini rain, 3rd pada ...	(1) Sravanabelagola, Channarayapatna Taluk.
Vaidruti ...	[n]Sri Rama Navami. Sri Anjaneya Swami Car Festival.	(2) Devanhalli, Channagiri Taluk.
SUDDHA.	[o]Sri Anjaneya Swami Car Festival Sri Venkata Ramana Swami Car Festival at Chikka Thirupathi, Asvini rain, 4th pada.	(3) Yeladoor, Srinivaspur Taluk.
[g]Vishkambha ...	[p]Sri Ranganatha Swami Car Festival, Thirumale.	(4) Varanasi, Kolar Taluk.
[h]Preeti ...	[q]Sowrammana Jatre, Jalaganahalli.	(5) Anagode, Davangere Taluk.
[i]Ayushman ...	[r]Bharani rain, 1st pada	Cattle Fair for 8 days at Doddakurugod, Goribidnur Taluk.
[j]Sowbhagya ...	Sri Dharmaraya Swami Karaga Festival, Bangalore City. Sri Prasanna Venkataramana Swami Car Festival, Budikote, Bowringpet Taluk.	
Sobhana ...	[s]Car Festival at Dodkurugod.	
[k]Atiganda ...	[t]Bharani Rain 2nd pada.	
[l]Sukarma ...		
[m]Dhriti ...		
[n]Soola ...		
Ganda ...		
[o]Vriddhi ...		
Dhruva ...		
[p]Vyaghata ...		
[q]Harsha ...		
[r]Vajra ...		
BAHULA.		
[s]Siddhi ...		
Vyatipata ...		
[t]Varigha ...		

Sugar-cane raiyats should lay in also a good supply of oil-cake for being used as manure for the sugar-cane. About 90 maunds will be required per acre, but even double this quantity may be used with advantage, for sugar-cane responds well to this manure. One-third of the quantity should be well powdered and applied at the time of planting, and the remaining two parts should be applied as top dressing later on during the growth of the cane. Sulphate of ammonia is a highly concentrated manure; it will stimulate growth quickly and encourage tillering. Use it at 2 cwts. per acre within three months from planting to supplement the cake manuring.

On dry lands when carting manure, cart also the soil from the beds of tanks which are usually dry at this time of the year, for the silt will both improve and enrich the soil.

Two well nourished calves are selected for controls on each occasion. Active Immunisation is conducted. If a control dies, a Panchayet is assembled to assess the value of the animal, the maximum limit being Rs. 16. The Veterinary Inspector compensates the owner, and forwards the receipt obtained with the Mahazar, for adjustment.

THE COFFEE BORER.

A Foolish Practice.

In all well managed coffee estates, it is a common practice to pull out trees which are too seriously injured by the borer to recover. The practice is based on the following facts in the life history of the borer. The borer (Fig 1) as was explained in an earlier issue of the Calendar is the young of a beetle (Fig 2) which lays its eggs beneath the scales in the bark of the coffee tree. (Fig 3.) These eggs hatch in about a week

FIG. 1

FIG. 2

FIG. 3

or 10 days and the young worm penetrates into the bark where it makes one or more rounds and then (after about 2½ months) gets into the wood where it makes extensive tunnels. So much of the growing wood is taken up by these tunnels that trees become unhealthy. Young trees may be killed by one grub tunnelling in its wood. When the trees are more than six or seven years old, it takes however more than one grub to kill it. Trees attacked by several borers year after year fail in the struggle, the crop they yield becomes smaller, the leaves yellow, and no more than a pull is necessary to break them off at the collar. There is little use in keeping these trees. On the other hand, there is great harm. For, they harbour inside several grubs which will turn into beetles and these will lay several hundreds of eggs at the rate of about 100 per female beetle which will in due course become as many beetles. The grubs turn into these beetles in the last quarter of the year, or October, November and December. The planter therefore goes round the estate well in advance of the season, looks for trees seriously injured and has them pulled out. These trees are usually heaped up together and burnt, the grubs inside

being killed. On many estates several thousands are burnt this way. In a bad borer year, an estate of 200 acres may have as many as 10,000 to 15,000 trees pulled out and burnt. The operation is costly, for, the pulling out, the heaping and firing costs much in labour and the vacancies have to be filled by young plants which again cost not a little, and these young plants take at least four to five years before they begin to yield. Ten thousand trees occupy about seven acres and no coffee estate worth the name sells at less than Rs. 400 per acre. Good coffee may fetch as much as Rs. 1,000 per acre. Assuming an acre of coffee costs only Rs. 400, 10,000 trees pulled out or 7 acres of coffee mean a loss Rs. 2,800 to the owner and what of the labour in pulling out and replanting and the period of four or five years he has to wait to get a crop from the young plants. The owner faces all the loss to prevent greater loss the next year. For, if the 10,000 trees are kept on, there will emerge from them at least 10,000 beetles next borer season which would cause far greater havoc. So, the owner is wise to face a comparatively small loss in one year to prevent far greater loss the next year. It is by the adoption of this method that coffee industry has survived in South India and the borer is under a fair degree of control. For the borer commenced its attack as early as the sixties of the last century and if the precaution of pulling out trees and burning seriously affected trees had not been taken early enough there would have been no estates left as a result of the annual decimation.

The failure of many estate owners to follow the practice is criminal. For not only they themselves suffer, but their neighbours as well, who after having faced the expense and trouble of pulling out affected trees on their estates have to face the consequences of the neglect of others. For, the borer beetle can fly fairly long distances and may wander over the estates of the latter and prevent them from deriving the full benefit of the costly measures they have undertaken. This is bad enough in all conscience; but what are we to say of planters who pull out the trees badly affected by borers, but will not have them burnt in time or will not burn at all except as firewood for the household? These curious folk find the coffee stems eminently suitable for firewood and so stack them to be used as occasion arises. In this way, several thousands of coffee stems have been found stacked in estates as late as November and December and may be found even later,—right during the time when beetles come out of the stems and afterwards. There could not be a greater folly. For, the pulling out of the trees does not by itself kill the grubs inside. From coffee stems brought over to Bangalore as early as March, beetles have emerged in October *i.e.*, six months after, and coffee stems from among the lot removed from estates but stored for household use as described above have similarly yielded beetles in October and November, that is, three months after removal. The grubs therefore are by no means killed whatever the changes that may take place in the trees after removal from the soil. These stacks so kept will release many hundreds of beetles which will fly far and near laying eggs on the trees in which they alight and which they find suitable, whether the trees belong to the planter responsible for the stack or to others. And this criminal folly is for the sake of a little convenience. Firewood is by no means difficult to obtain in coffee estates. It exists in abundance as all will admit. Why then resort to a practice so foolish? The complaint of those planters that the precautions they take at so much cost and trouble tend to be nullified by this folly of some of their neighbours

Holidays	English Dates	Days of week	Chandramana Dates	Thithies in Ghaliges and Vighaliges			Nakshatrams in Ghaliges and Vighaliges		
							NIJA CHAITRA		
	1	Saturday ...	4	Chouti	... 53	21	Jeshta	... 26	53
	2	Sunday ...	5	Panchami	... 49	9	Moola	... 25	5
	3	Monday ...	6	Shashti	... 44	0	Poorvashadha	... 22	16
	4	Tuesday ...	7	Saptami	... 38	9	Uttarashadha	... 18	39
	5	Wednesday	8	Ashtami	... 31	49	Sravana	... 14	28
	6	Thursday ...	9	Navami	... 25	16	Dhanishta	... 9	57
	7	Friday ...	10	Dasami	... 18	47	Satabhisha	... 5	24
	8	Saturday ...	11	Ekadasi	... 12	37	Poorvabhadra	... 1	3
							Uttarabhadra	... 55	16
	9	Sunday ...	12	Dvadasi	... 7	0	Revati	... 53	56
	10	Monday ...	13-14	Trayodasi	... 2	5	Asvini	... 51	49
				Chaturdasi	... 55	48			
	11	Tuesday ...	30	● Amavasya	... 55	8	Bharani	... 50	46
							VAISAKHA		
	12	Wednesday	1	Padyami	... 54	8	Krittike	... 51	12
C. &	13	Thursday ...	2	Bidige	... 53	21	Rohini	... 52	21
H.	14	Friday ...	3	Tadige	... 54	17	Mrigasira	... 54	57
	15	Saturday ...	4	Chouti	... 56	20	Aridra	... 58	38
H.	16	Sunday ...	5	Panchami	... 59	21	Punarvasu	... 60	10
	17	Monday ...	6	Shashti	... 60	10	Punarvasu	... 3	27
	18	Tuesday ...	6	Shashti	... 3	18	Pushya	... 8	48
	19	Wednesday	7	Saptami	... 7	37	Aslesha	... 14	37
	20	Thursday ...	8	Ashtami	... 12	4	Makha	... 20	37
	21	Friday ...	9	Navami	... 16	32	Pubba	... 26	35
	22	Saturday ...	10	Dasami	... 20	43	Uttara	... 32	13
	23	Sunday ...	11	Ekadasi	... 24	18	Hasta	... 37	15
G.	24	Monday ...	12	Dvadasi	... 27	6	Chitta	... 41	28
	25	Tuesday ...	13	Trayodasi	... 28	53	Svati	... 44	41
	26	Wednesday	14	Chaturdasi	... 29	31	Visakha	... 46	45
	27	Thursday ...	15	○ Pournami	... 28	54	Anoradha	... 47	35
							VAISAKHA		
	28	Friday ...	1	Padyami	... 27	4	Jeshta	... 47	11
	29	Saturday ...	2	Bidige	... 24	0	Moola	... 45	36
	30	Sunday ...	3	Tadige	... 19	51	Poorvashadha	... 42	56
	31	Monday ...	4	Chouti	... 14	48	Uttarashadha	... 39	28

MONTHLY NOTES

On fields ploughed after the previous harvest, sow in the bharani rains the early mungar crops, *viz.*, gingelli, jola, green gram, black gram or groundnut which can be followed in the months of September or October by a second crop, such as horse gram, cow-pea, Bengal gram or wheat.

Sow all crops in rows and wide apart, *i.e.*, one foot, so as to make inter-culture easy later on.

On dry lands not previously ploughed ploughing should begin. Use the

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle shows, Agricultural Exhibitions and other useful notes
BAHULA.		
Parigha ...		
Siva Siddha ...		
Sadhya ...	Bharani rain, 3rd pada.	
Subha ...	Sri Venkata Ramana Swami Car Festival Ronoor.	Ronoor, Srinivaspur Taluk.
Sukla ...		
Brahma ...		
Mahendra ...	Bharani rain 4th pada,	
Vaidruti ...		
Vishkambha ...		
Ayushman ...	Krittike rain 1st pada.	
Sowbaghya ...		From this month onwards up to the middle of July, in every village in which there was an attack of *Kamblihula* last year, the villagers should go round the fields after every shower to pick up the moths which are white with golden bands on the body and are conspicuous objects in the fields. All moths caught should be killed by throwing them into water to which a little kerosene has been added. Picking may be done by children. This will prevent attack by *Kamblihulas*. See Circular No. 15 of the department.
SUDDHA.		
Sobhana ...		
Atiganda ...	Ascension day and Basava Jayanti.	
Sukarma ...		
Dhriti ...	Krittike rain 2nd pada.	
Soola ...	Sri Shankracharya Jayanti.	
Ganda ...		
Vriddhi ...	Krittike rain 3rd pada.	
Dhruva ...	Sri Kothanda Rama Swami Car Festival, Srinivaspur Town.	
Vyaghata ...		
Harsha ...		
Vajra ...	Krittike rain 4th pada.	
Sidhi ...	Rohini rain 1st pada,	
Vyatipata ...	Empire day. Sri Shankaracharyara Aradhana.	
Varigha ...	Sri Narasimha Jayanti,	
Parigha ...	Vyasa Pournami, Sri Kothandarama Swami Car Festival, Bowringpet Town.	
Siva ...		
BAHULA.		
Siddha ...	Rohini rain 2nd pada.	
Sadhya ...	Sri Narasimha Swami car Festival, Maddur, Mandya Taluk.	
Subha ...		
Sukla ...	Rohini rain 3rd pada.	

improved plough; for it will do the work of four country ploughs.

On wet lands, sow a green manure crop, such as sunnhemp (30 seers to the acre) or sunnhemp and cow-pea; this will be ready for being ploughed in puddle-sown paddy in July.

For sugar-cane planted in February—March, apply a second dose of oil-cake and dig it in lightly.

On garden land under well irrigation, potatoes, onions, and turmeric can now be planted.

is very reasonable and must receive sympathetic consideration and if they demand that the Pest Act should be enforced against the offenders the Government is bound in all reason and fairness to do so. It is hoped however that resort to this measure will not be forced on the Government, but that the planters who neglect to burn their trees pulled out will realise this folly and join hands with others in their fight against the borer.

THE MYSORE DOMESTIC UNIT.

This year, the department of Sericulture took out a patent for an improved reeling outfit called "The Mysore Domestic Unit."

With the view of improving the general quality of Mysore silk, experiments were conducted with various types of domestic basin; demonstrations were organised on a large scale, and constructive criticism was invited from all eligible quarters. The conclusions arrived at are summarised below:—

(1) It is essential to the development of Mysore sericulture, and even to its stability, that the quality of the raw silk produced should be improved so as to extend its employment in manufactures. At present, its low quality confines it to a narrow and comparatively unremunerative market.

(2) Conditions in Mysore make it imperative that this improvement must commence in the villages in close touch with the rearing industry; and it cannot be imposed from outside by the establishment of filatures. The improvement of raw silk is dependent on the improvement of cocoons by good seed and better rearing methods on the one hand, and more efficient reeling machinery on the other. In Mysore, reeling cannot, without disaster, be dissociated from seed production and rearing.

(3) The reeling machinery should satisfy the following conditions:—

(a) It must possess all the essential working parts of the latest type of filature basin, which ensure proper size, strength, and cohesion.

(b) It must be strong, simple in construction, and capable of being attended to by the village smith with his ordinary resources.

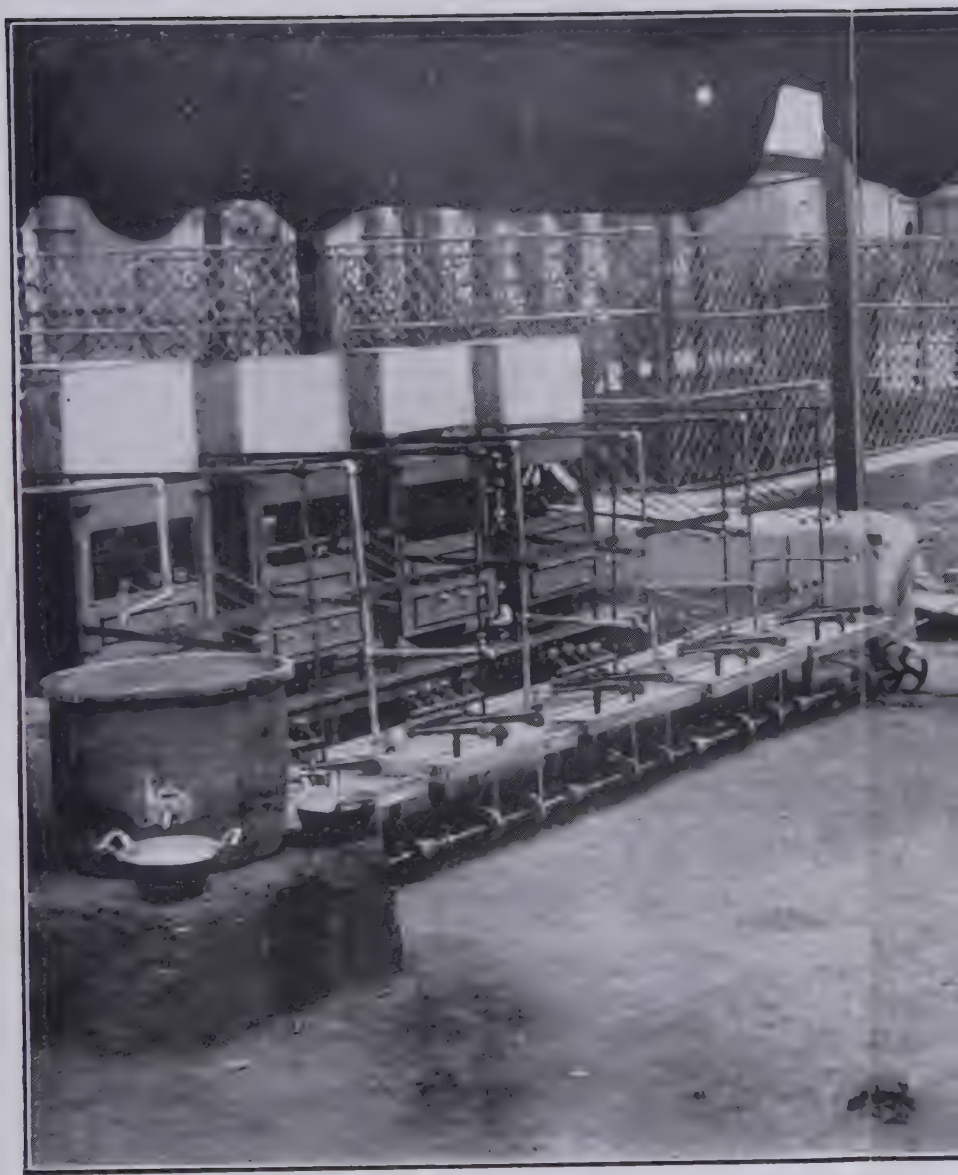
(c) Its initial cost must be within the means of the average village family; its working should demand no special skill or expense, and it should exact no requirements in the way of furniture.

(d) It should be portable, and should lend itself to gradual expansion by the addition of fresh units, securing fresh economies with each expansion.

(e) While not inferior in efficiency to the best foreign basins, it should compare favourably with the village charka in cheapness of operation and adaptability to rural conditions.

It is obvious that (*b*) (*c*) (*d*) (*e*) put the foreign basins out of court at once.

The Mysore Domestic Basin satisfies all these conditions, as will be seen from the following specification entered for purposes of taking out a patent.



MYSORE DOMESTIC BASIN.

The illustration shows four basins fitted together. They can be operated b
water tank on each basin supplies water both to the hot water tank (at the left ha
is supplied also from the hot water tank to the reeling basins—where the tempe
If it is desired to start a battery of more basins than one, a single large cold wate
several small tanks.

The special features of the Mysore Basin are these :—

(i) Lightness and portability.
(ii) No breakable parts, and no parts which could not be repaired or refitted on the spot by the village artisan.
(iii) Facility for extending installation gradually by addition of fresh basins as business develops.
(iv) Gravitation water supply by means of raised tank :—automatic distribution of both hot water and cold water, with reeler's control over same, ensuring maintenance not only of proper temperature, but of necessary cleanness for reeling.
(v) Special cooking arrangement, with central heater and minor spouts for boiling water, securing economy of fuel and labour.
(vi) Foot and hand brakes.
(vii) Low basin position and low position of reel enabling operative to sit on floor when working, eliminating need for furniture, accessibility of reel so as to admit of reeler knotting.
(viii) Variable gear, admitting of regulation of speed of revolution.
(ix) Pulley system of distributor, combining efficiency of control with simplicity and cheapness.
(x) Funnel-turned 'jette bouts' minimising breakages.
(xi) Almond shaped basin, allowing space for reeling the largest sizes.
(xii) Wooden table with metal cover.

This basin has been successfully tested throughout the State, and has everywhere secured approval. A photograph of a model made for us by the Chamarajendra Technical Institute, Mysore, is enclosed, and gives a tolerably good idea of the appearance of the outfit.

Perhaps the most severe test to which the Mysore Domestic Basin was subjected was at Agara, in Yelandur Taluk, during the demonstration that was held there about the middle of November. Agara and Momballi, which are practically one continuous village, are in the very pith of the Mysore District sericultural area. Momballi is probably the biggest reeling centre in the District and one of the biggest in the State. Much of the cocoon production in Yelandur, Chamrajnagar, T.-Narsipur and Kollegal is absorbed there and sent out to Kollegal as raw silk. The air is alive all day with the hum of hundereds and hundreds of charkas—and here may be seen Adikarnatakas who have built fortunes and worked their way up to consideration by successful practice of this industry. It was one of these men—a man called Mr. Gogga—who put the Mysore Domestic Basin on its trial.

Mr. Gogga, who owns a reeling establishment at Momballi which employs 20 charkas, was among the interested professional men who watched the demonstration keenly for the first five days. It was generally admitted that the Domestic Basin reeled excellent silk, far superior to any silk that could ever be reeled with the charka; *that* any body could see; but how would it work from a money point of view? Could steamed cocoons be reeled? What would the daily output be like? Would there not be a disproportionately large quantity of waste, and a correspondingly low output of silk for a given quantity of cocoons? What about the consumption of fuel?

Different opinions were expressed in the usual free and confident village style; some questions were asked and answered; a certain amount of polite assent was secured—but it was felt that the large majority still remained unconvinced. Then suddenly Mr. Gogga who had been observing in silence, neither asking nor answering questions, came out

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges			Nakshatrams in Ghaliges and Vighaliges		
									VAISAKH
	1	Tuesday ...	5	Panchami ...	9	0	Sravana ...	35	20
	2	Wednesday	6–7	Shashti ...	2	40	Dhanishta ...	30	50
				Saptami ...	53	24			
G.	3	Thursday ...	8	Ashtami ...	47	58	Satabhisha ...	26	15
	4	Friday ...	9	Navami ...	43	9	Poorvabhadra ...	21	46
	5	Saturday ...	10	Dasami ...	37	26	Uttarabhadra ...	17	54
	6	Sunday ...	11	Ekadasi ...	32	30	Revati ...	14	37
	7	Monday ...	12	Dvadasi ...	28	32	Asvini ...	12	16
	8	Tuesday ...	13	Trayodasi ...	25	36	Bharani ...	10	58
	9	Wednesday	14	Chaturdasi ...	24	0	Krittike ...	10	52
	10	Thursday ...	30	● Amavasya	23	34	Rohini ...	11	58
									JESHT
	11	Friday ...	1	Padyami ...	24	21	Mrigasira ...	14	17
	12	Saturday ...	2	Bidige ...	26	16	Aridra ...	14	43
	13	Sunday ...	3	Tadige ...	29	9	Punarvasu ...	22	7
	14	Monday ...	4	Chouti ...	32	48	Pushyami ...	27	17
	15	Tuesday ...	5	Panchami ...	37	1	Aslesha ...	33	1
	16	Wednesday	6	Shashti ...	43	15	Makha ...	40	30
	17	Thursday ...	7	Saptami ...	45	57	Pubba ...	45	1
	18	Friday ...	8	Ashtami ...	50	8	Uttara ...	50	47
	19	Saturday ...	9	Navami ...	53	48	Hasta ...	56	2
M.	20	Sunday ...	10	Dasami ...	56	40	Chitta ...	60	0
G.	21	Monday ...	11	Ekadasi ...	58	28	Chitta ...	0	20
	22	Tuesday ...	12	Dvadasi ...	59	15	Svati ...	3	44
	23	Wednesday	13	Trayodasi ...	58	42	Visakha ...	6	1
	24	Thursday ...	14	Chaturdasi ...	56	54	Anoradha ...	7	7
	25	Friday ...	15	○ Pournami	53	51	Jeshta ...	7	0
									JESHTA
	26	Saturday ...	1	Padyami ...	49	40	Moola ...	5	41
	27	Sunday ...	2	Bidige ...	44	33	Poorvashadha ...	3	19
	28	Monday ...	3	Tadige ...	38	41	Uttarashadha ...	0	4
							Sravana ...	56	6
	29	Tuesday ...	4	Chouti ...	32	19	Dhanishta ...	51	35
	30	Wednesday.	5	Panchami ...	25	43	Satabhisha ...	46	58

MONTHLY NOTES.

The south-west monsoon begins in this month, and it is really the season for preparing land for sowing. For, nearly all the fields remain untouched, baking and hardening through the hot months and only the heavy showers of this month can moisten them sufficiently well to plough. Fields, however, which were given the first ploughing in the previous month, should be cross-ploughed now, so as to kill the weeds which may have sprouted in the interval. In the preparation of the soil for sowing, the point to remember is the great

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows, Agricultural Exhibitions and other useful notes
BAHULA		
Bramha ...		
Mahendra ..		
Vaidruti ..		
Vishkamba ...	H. M. The King Emperor's Birthday.	
Preeti ...	Rohini rain 4th pada.	
Ayushman ...		
Sowbhagya ...	H. H. The Yuvaraja's Birthday.	
Sobhana ...	Mrigasira rain 1st pada.	
Atiganda ...		
Sukarma ...		After the *mungar* rains, the paddy grasshoppers emerge on the bunds. When young, they feed on the grass on the bunds. They cannot jump long distances then, and are easily caught by sweeping large bags of cotton cloth over the bunds. Enormous numbers can be caught in this way. They are then crushed or thrown into water and a little kerosene. All the raiyats in the village should co-operate. The bags should be 5 feet long and 2 feet by 4 feet at the mouth. The opening is supported at the side by two sticks 3 feet each and two men sweep the bunds at a run. See bulletin No. 1.
Dhriti, Soola ...		
SUDDHA.		
Ganda ...	Mrigasira rain 2nd pada.	
Vridhi ...		
Dhruva ...		
Vyaghata ...	Mrigasira rain 3rd pada.	
Harsha ...		
Harsha ...		
Vajra ...		
Siddhi ...	Mrigasira rain 4th pada.	
Vyatipata ...		
Varigha ...	Bakrid.	
Parigha ...	H. H. the Maharaja's Birthday Aridra rain 1st pada. Smartha Ekadasi.	
Siva ...	Vaishnava Ekadasi.	
Siddha, Sadhya ...		
Subha ...		
Sukla ...	Aridra rain 2nd pada.	
BAHULA.		
Brahma ...		
Mahendra ...	H. R. H. The Prince of Wales' Birthday.	Remedial measures against *koleroga* of the Areca palm and coffee in the malnad should be carried out in this month.
Vaidruti ...	Aridra rain 3rd pada.	
Vishkambha ...		
Preeti ...		

saving in time and money which can be effected by the use of the improved implements such as the improved or the mould-board plough, the six shovel cultivator, the disc harrow and the *doddakunte*. All these implements can be seen in the Government Experimental Farms. They are stocked and sold by the Agricultural Department, and can be had in the Central Implement Depot in Bangalore and in the Depots of the Agricultural Inspectors in the districts.

On fields got ready for sowing, main crops of jola, Dharwar-American cotton and dry land paddy may be sown.

with a proposal. He had a charka reeler at Momballi, whom he would back for sheer skill against any reeler in the district. He would give that man 29 seers of steamed cocoons to reel in the charka and get absolutely correct figures of all items of expenditure, and of output of silk and waste. He would give us the same quantity of cocoons, out of the same lot. Would we reel it in his presence, and let him ascertain the figures for comparison?

A severe test, for ours was a travelling outfit hastily rigged up under unfamiliar conditions; but a perfectly fair test and one which the outfit should successfully stand before it could win its way to recognition.

Mr. Gogga's offer was in effect a challenge which we could not decline without admitting defeat; we accepted it, with a weighty sense of its importance, but without any doubt as to its result. The test reeling took place on the 15th of November, in the presence of Mr. Gogga, and of perhaps a hundred reelers and merchants, among whom were all the leading Sahukars and industrialists of Momballi. The result fully vindicated our confidence.

A tabular statement of the data obtained is given below. The figures are absolutely accurate, and were ascertained by actual weighment by Mr. Gogga himself. The prices assumed for calculation are prices actually offered on the spot and were accepted by Mr. Gogga. The financial result of work of the Domestic Unit with the 18 seers of cocoons was a profit of Rs. 2-6-0 (time taken, half a day) while the profit earned by the charka for reeling the same quantity of cocoons was Re. 0-8-0. The time taken by the charka was more, because only one was used, whereas the Domestic Plant consisted of two basins. Two reelers were employed and paid for half a day in the Domestic Unit, while only one was employed and paid for three quarters of a day with the charka. The quantity of fuel consumed in the Domestic Basin was actually a third less than with the charka.

The result was that Mr. Gogga at once placed an order for 5 basins, and made arrangements with two trained sericulturists to start a reeling business on improved lines. These sericulturists are now actually at Mysore, undergoing training with the new basin.

The silk produced by the Domestic Basin is almost of the same grade as Filature silk, and can be used for all purposes for which Filature silk is required. The Domestic Unit costs about Rs. 250 including basin, tank, hot water drum and cooking basin complete. Spare parts can always be obtained from the Sericultural Department. The outfit is so solidly made that once bought, it is a permanent acquisition and involves no worry on expense in upkeep.

Statement showing comparative results of Reeling Tests conducted with country charka and Domestic Unit at Agara on the 15th November 1925:

I. Output of Silk and Waste.

No.	Country Charka			Domestic Unit			Remarks
	Quantity of cocoons reeled in raw weight	Silk obtained	Waste obtained	Quantity of cocoons reeled in raw weight	Silk obtained	Waste obtained	
1	18seers ...	36½ tolas.	30 tolas.	18 seers ...	32½ tolas.	20 tola,	Water from Balayzam katte supposed to be very good for reeling and reelers use this alone.

II. Financial Results.

No.	Country Charka				Domestic Unit			
	Expenditure	Amount	Realisations	Amount	Expenditure	Amount	Realisations	Amount
		Rs.		Rs.		Rs.		Rs.
1	Cost of 11¼ lbs or 18 seer of raw cocoons at Re. 0-10-8 per lb.	7 8 0	Cost of 36⅛ tolas of silk at Rs. 9-5-0 per lb. (at the then market value.)	8 8 0	Cost of 11¼ lbs of raw cocoons at 0-10-8 per lb.	7 8 0	Cost of 32½ tolas of silk at Rs 12-12-0 per lb. (at the then market value.)	10 6 0
2	Reeler ...	0 6 0	Cost of 30 tolas of silk waste.	0 8 0	Reeler ...	0 8 0	Cost of 20 tolas of silk waste.	1 0 0
					Preparer ...	0 6 0		
3	Turner ...	0 2 0			Turner ...	0 4 0		
4	Cost of fuel.	0 6 0			Cost of fuel.	0 4 0		
5	Water charges	0 2 0			Water charges	0 2 0		
	Total ...	8 8 0	Total ...	9 0 0	Total ...	9 0 0	Total ...	11 6 0
	Net profit...	0 8 0	...		Net profit...	2 6 0		...

STAMPING OUT THE KOLEROGA OF ARECA.

Since the time that the preventive measures against the Koleroga of the arecanut were introduced in the malnad areas fourteen years ago, it is noteworthy to find many garden-owners, who have been spraying their gardens year after year, some, consecutively for seven years. The effect of such uninterrupted treatment of the gardens, on the incidence of the disease, has been very striking in that the virulence of the outbreak has been mitigated to a large extent. But can the disease be stamped out after a few years' spraying?

Experiments were taken up by the Department during 1912-1914 in three gardens in Tirthahalli Taluk, and one in Sagar Taluk to see if the disease can be stamped out. Gardens fairly isolated were chosen, and sprayed consecutively for three years, after which period, they were kept under observation. At Kerodi, (Tirthahalli Taluk) the disease broke out again by slow degrees, reaching its former virulence in the course of three years. In all the other gardens, except at Agumbe, the disease broke out the very year that the spraying work was stopped. In the Agumbe garden, which is quite isolated, the disease has not appeared at all for the last eleven years.

Where gardens are situated in large blocks, extending over an area of 40-60 acres, the difficulties of controlling the disease are greatly increased. If all the garden-owners in the block co-operate in spraying, then the outbreak is lessened. If as is usually the case, some who own small holdings, fail to spray, the virulence of the disease is increased. In this connection, a Pest Act applied judiciously, will go a long way to mitigate the evil. Small strips, left unsprayed, in the midst of a large block garden, tend to perpetuate the disease.

Another fact brought to light recently, presents an insurmountable difficulty in the way of stamping out the disease. It has been found that a large number of wild plants growing in these areas are attacked by a disease similar to Koleroga (Phytophthora). The outbreak of

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges			Nakshatrams in Ghaliges and Vighaliges		
									JESHTA
	1	Thursday ..	6	Shashti	.. 19	9	Poorvabhadra	.. 42	28
	2	Friday ..	7	Saptami	.. 12	51	Uttarabhadra	.. 38	20
	3	Saturday ..	8	Ashtami	.. 7	2	Revati	.. 34	54
	4	Sunday ..	9-10	Navami	.. 2	5	Asvini	.. 32	18
				Dasami	.. 55	37			
	5	Monday ..	11	Ekadasi	.. 54	36	Bharani	.. 30	45
	6	Tuesday ..	12	Dvadasi	.. 52	51	Krittike	.. 30	21
	7	Wednesday..	13	Trayodasi	.. 52	24	Rohini	.. 31	10
	8	Thursday ..	14	Chaturdasi	.. 53	2	Mrigasira	.. 33	11
	9	Friday ..	30	●Amavasya	.. 54	52	Aridra	.. 36	22
									ASHADHA
	10	Saturday ..	1	Padyami	.. 58	5	Punarvasu	.. 40	55
	11	Sunday ..	2	Bidige	.. 60	10	Pushyami	.. 45	34
	12	Monday ..	2	Bidige	.. 2	5	Aslesha	.. 51	10
	13	Tuesday ..	3	Tadige	.. 5	35	Makha	.. 57	9
	14	Wednesday..	4	Chouti	.. 10	2	Pubba	.. 60	10
	15	Thursday ..	5	Panchami	.. 14	28	Pubba	.. 3	10
	16	Friday ..	6	Shashti	.. 18	38	Uttara	.. 8	58
	17	Saturday ..	7	Saptami	.. 22	16	Hasta	.. 14	17
M.	18	Sunday ..	8	Ashtami	.. 25	9	Chitta	.. 18	51
G.	19	Monday ..	9	Navami	.. 27	1	Svati	.. 22	30
	20	Tuesday ..	10	Dasami	.. 27	48	Visakha	.. 25	4
	21	Wednesday..	11	Ekadasi	.. 27	20	Anoradha	.. 26	27
	22	Thursday ..	12	Dvadasi	.. 25	42	Jeshta	.. 26	39
	23	Friday ..	13	Trayodasi	.. 22	42	Moola	.. 25	32
	24	Saturday ..	14	Chaturdasi	.. 18	40	Poorvashadha	.. 23	22
	25	Sunday ..	15	O Pournami	.. 13	42	Uttarashadha	.. 20	15
									ASHADHA
	26	Monday ..	1	Padyami	.. 7	58	Sravana	.. 16	25
	27	Tuesday ..	2-3	Bidige	.. 1	40	Dhanishta	.. 12	5
				Tadige	.. 53	24			
	28	Wednesday..	4	Chouti	.. 58	27	Satabhisha	.. 7	31
H.	29	Thursday ..	5	Panchami	.. 42	5	Poorvabhadra	.. 2	58
							Uttarabhadra	.. 55	38
	30	Friday ..	6	Shashti	.. 36	1	Revati	.. 54	55
	31	Saturday ...	7	Saptami	.. 31	11	Asvini	... 52	5

MONTHLY NOTES.

Nearly all the main crops of the year, *viz.*, ragi, jola, groundnut, sajje, save, haraka with their subordinate *akkadi* crops are sown this month.

On wet lands, paddy is sown in puddle if water is available, or sown in a dry (not irrigated or puddled) seed bed.

Both ragi and paddy intended for seed should be selected before being sown: for it has been found that the sowing of such selected seeds increases the yield materially. The selection is for securing heavy grains; for this purpose, prepare a solution of ordinary salt in water using one seer of salt to two of water; put the seed paddy or ragi into the solution and stir; remove and reject the grains which

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams.	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes.
BAHULA.		
Ayushman, Sowbhagya		
Sobhana ..	Aridra rain, 4th pada.	
Atiganda ..		
Sukarma ..		
Dhriti ..	Smartha Ekadasi Punarvasu rain, 1st pada.	
Soola ..	Vaishnava Ekadasi.	
Ganda ..		
Vriddhi ..		
Dhruva ..	Punarvasu rain, 2nd pada.	
SUDDHA.	Solar eclipse.	
Vyaghata ..		
Harsha ..		
Vajra ..	Punarvasu rain, 3rd pada.	
Siddhi ..		
Vyatipata ..		
Varigha ..		
Parigha ..	Punarvasu rain, 4th pada.	
Siva ..	Dakshinayana Punyakala.	
Siddha ..	18th to 21st Moharam, holidays.	
Sadhya ..	Pushyami rain, 1st pada.	
Subha ..	Last day of Moharam.	
Sukla ..	Prathama Ekadasi.	
Brahma ..		
Mahendra ..	Pushyami rain, 2nd pada.	
Vaidruti, Vishkambha.		
Preeti ..	Vyasa Pournami.	
BAHULA.		
Ayushman ..	Pushyami rain, 3rd pada.	
Sowbhagya ..		
Sobhana ..		
Atiganda ..	Tikacharyara Punya Divasa	
Sukarma ..	Pushyami rain, 4th pada.	
Dhriti ..		

float and use the grains which sink to the bottom for seed, after drawing the salt water away and giving the grain a washing with fresh water. Treat jola with a solution of copper sulphate for smut or *kadige roga*. Packets of copper sulphate with full instructions regarding the method of using it can be had in all the depots of the department.

The new variety of ragi called H22 is a high yielder both in grain and straw. It is now grown on thousands of acres. Try its suitability to your tract. Other good strains can also be had on application to the department.

During the first half of this month, chillies and tobacco intended to be raised as dry crops should be sown in nursery beds so as to have seedlings ready for transplanting about the end of the next month.

the disease on these wild plants in relation to its possible spread on to the arecanut has not yet been fully studied. It has not been clearly understood hitherto, just how the germs of the areca Koleroga, survive during the hot season, between two monsoon periods. It is likely that some of the wild plants may act as alternate host plants for the areca Koleroga, and may harbour the hibernating stage, which help the disease in tiding over the summer season. However, so far, it has been found, by cross-inoculation experiments, that the Koleroga attacking one of the commonest weeds of the malnad, namely, Bryophyllum calycinum (Kan. Patapati yele) can affect the arecanut. It has also been observed that the disease makes its appearance on Bryophyllum, just a few days before it breaks out on areca. Seeing that the arecanut gardens are always situated in valleys, it is possible that the germs affecting Bryophyllum plants, growing at a higher level, are carried on to the areca bunches by means of wind or some other agency.

In the light of the above fact, it will be seen that the complete stamping out of the disease on areca is not possible, much less the eradication of all the likely alternate host plants. The only alternative left for the garden-owners is to save their yearly crop by taking up spraying work much in the manner of a regular agricultural operation.

The following table gives an idea of the number of gardens and the area sprayed during 1925.

Taluk	Number of gardens sprayed	Area sprayed
		Acres
Sagar	442	3,695
Tirthahalli	217	992
Nagar	236	1,490
Koppa	120	425
Total ..	1,015	6,602

SUNFLOWER TRIALS.

Sunflower is best grown for ensilage purposes only, and gives the best results when used in that way. If allowed to mature seed and become dry, the leaves and stalks become dry and pithy and of no use for feed. If ensiled in the right condition, sunflower makes an excellent fodder which is well relished by all stock. At first, the cattle may show some aversion to the fodder in this form, but after two or three feeds, will take to it readily and relish it well. In this condition, it is also a valuable and nutritious fodder.

Growth.—One of the characteristics of sunflower is its ability to withstand drought, but at the same time, it will do better under more congenial climatic conditions. Under ordinary conditions on dry lands, a crop of 5 tons of green fodder to the acre should be obtained, but on well manured land, and suitable seasonal conditions nearly twice that yield can be obtained. Very little experience has been obtained with

sunflower as an irrigated crop in this country, but it is known that heavy watering is not required, and that good yields can be obtained where drainage is good and an excess of water is avoided.

Seed should be sown at the rate of 15 to 20 lbs. per acre in rows 3 feet apart, the plants being about 4 inches apart in the rows. Cultivation between the rows should be done as long as possible, roughly until the plants are about 2 feet high. On account of the heavy leaf foliage thrown out by plants, the ground after this stage becomes heavily shaded, and weeds are kept well under control. In fact, sunflower seems to be a particularly useful crop to help in the eradication of weeds.

The seed may also be broadcasted, in which case, inter-cultivation is not possible, and a slightly heavier seed rate may be used.

There is a certain amount of variability in the germination of sunflower seed and it is advisable to carry out a germination test before sowing, and where the percentage of germination is low, increase the seed rate accordingly.

The crop should be cut for putting in the silo, when about one-third of the plants are in bloom, and certainly not later than when half the crop is in full bloom. The crop should not be cut faster than it can be carted to the silo, as it wilts very rapidly, and a loss of weight results. The best ensilage is made when the crop is ensiled shortly after cutting. Cut crop should not be left lying over night if this can be avoided.

For an acre of sunflower, when a five ton crop is expected, a circular pit silo, 6 feet in diameter and 15 feet deep will be required. If possible, the stalks should be cut into short lengths when put in the pit, and must be laid flat and carefully packed and trampled down, the whole being covered with a layer of earth when the pit is completely filled. For further details regarding the manufacture of ensilage, attention is drawn to the article on the manufacture of ensilage, in Vol. IV, No. 2 of the Journal of the Mysore Agricultural and Experimental Union, 1922.

OUR MANURIAL PROBLEMS.

Manurial problems are very intimately connected with the increase of agricultural production in the State. An adequate supply of proper manures must go hand in hand with the introduction of improved implements and new high yielding strains of seed; otherwise owing to intensive feeding of the higher yielding varieties of seed, an impoverishment of the soil will take place and the yields will go down very soon.

It is not very easy to get the maximum yields from our lands by the application of farm-yard manure alone. In the first place, the large quantity of manure needed is not available, and secondly, by the application of it alone, it is not possible to cater to the individual and special requirements of every kind of crop. Hence recourse must be had to the application of artificial manures.

Of the manures that we may profitably apply, the various kinds of oil-cakes are the only ones produced in this country. But the use of oil-cakes alone does not supply a crop like sugar-cane with the necessary amount of nitrogen during the most vigorous stage of its growth and at

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges			Nakshatrams in Ghaliges and Vighaliges		
								ASHADA	
	1	Sunday ...	8	Ashtami	... 27	2	Bharani	... 50	16
	2	Monday ...	9	Navami	... 23	59	Krittike	... 49	34
	3	Tuesday ...	10	Dasami	... 22	7	Rohini	... 50	6
	4	Wednesday.	11	Ekadasi	... 21	30	Mrigasira	... 51	51
	5	Thursday ...	12	Dvadasi	... 22	8	Aridra	... 54	46
	6	Friday ...	13	Trayodasi	... 23	55	Punarvasu	... 58	46
	7	Saturday ...	14	Chaturdasi	... 26	38	Pushyami	... 60	10
	8	Sunday ...	30	● Amavasya	30	12	Pushyami	... 3	48
								SRAVANA	
	9	Monday ...	1	Padyami	... 34	21	Aslesha	... 9	25
	10	Tuesday ...	2	Bidige	... 38	49	Makha	... 15	7
	11	Wednesday.	3	Tadige	... 43	18	Pubba	... 21	7
	12	Thursday ...	4	Chouti	... 47	33	Uttara	... 27	0
	13	Friday ...	5	Panchami	... 57	20	Hasta	... 32	26
	14	Saturday ...	6	Shashti	... 54	20	Chitta	... 37	14
	15	Sunday ...	7	Saptami	... 56	23	Svati	... 41	8
	16	Monday ...	8	Ashtami	... 57	17	Visakha	... 44	0
	17	Tuesday ...	9	Navami	... 56	57	Anoradha	... 45	38
	18	Wednesday.	10	Dasami	... 55	21	Jeshta	... 46	4
	19	Thursday ...	11	Ekadasi	... 52	30	Moola	... 45	16
	20	Friday ...	12	Dvadasi	... 48	31	Poorvashadha	... 43	19
	21	Saturday ...	13	Trayodasi	... 43	33	Uttarashadha	... 40	23
G.	22	Sunday ...	14	Chaturdasi	... 37	48	Sravana	... 36	37
G.	23	Monday ...	15	O Pournami	... 31	30	Dhanishta	... 32	21
								SRAVANA	
	24	Tuesday ...	1	Padyami	... 25	0	Satabhisha	... 27	48
	25	Wednesday.	2	Bidige	... 18	27	Poorvabhadra	... 23	13
	26	Thursday ...	3	Tadige	... 12	8	Uttarabhadra	... 18	54
	27	Friday ...	4	Chouti	... 6	17	Revati	... 15	4
	28	Saturday ...	5-6	Panchami	... 1	9	Asvini	... 12	5
				Shashti	... 55	33			
	29	Sunday ...	7	Saptami	... 53	40	Bharani	... 10	10
	30	Monday ...	8	Ashtami	... 51	46	Krittike	... 9	3
	31	Tuesday ...	9	Navami	... 51	11	Rohini	... 9	17

MONTHLY NOTES.

A busy month for inter-culturing the main crops. It is well to note that for cultivating between the rows, the small *kunte* with an entire blade—a miniature *doddakunte*—is an excellent implement, as it works the whole of the space between the rows. Labour can be economised by using two or three of these with one team.

On black cotton soils, the main crop of local cotton (*sanna hatti*) with its mixture of *navane* should be sown about the middle of this month.

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
BAHULA.		
Ganda ...		
Vriddhi ...	Aslesha rain 1st pada.	
Dhruva ...		
Vyaghata ...		
Harsha ...		
Vajra ...	Aslesha rain 2nd pada.	
Siddhi ...		
Vyatipata ...	Bheemana Amavasya.	
SUDDHA.		
Varigha ...	Aslesha rain 3rd pada.	
Parigha ...		
Siva ...		
Siddha ...	Nagara Chaturthi.	
Sadhya ...	Garuda Panchami Aslesha Rain 4th pada.	
Subha ...		
Sukla ...		
Bramha ...	Makha rain 1st pada.	
Mahendra ...		
Vaidruti ...		
Vishkambha ...	Smartha Ekadasi.	
Preeti ...	Vaishnava Ekadasi, Varamahalakshmi Vratam. Makha rain 2nd pada.	
Ayushman ...		
Sowbhagyam ...	Asvalayana Upakarma.	
Sobhana, Atiganda ...	Apastambha Upakarma. Makha rain 3rd pada.	
BAHULA.		
Sukarma ...	Gayatri Japam.	
Dhriti ...		
Soola ...		
Ganda ...	Makha rain 4th pada.	
Vriddhi ...		
Dhruva ...		
Vyaghata ...	Sri Krishna Janmashtami pubba rain 1st pada.	
Harsha ...	Sri Krishna Jayanti	

On fields kept repeatedly ploughed, harrowed and weeded during the past three months, chillies should be transplanted; so should tobacco, the transplanting of which may be continued from about the latter part of this month to the middle of the next.

On garden lands under well irrigation, the main rainy season grain crop of ragi may be transplated.

a reasonable cost. Hence recourse must be had to the use of such manures as sulphate of ammonia.

Of phosphatic manures, superphosphate is the one which has been found to be very useful in increasing crop yields.

These two manures have only been recently introduced into the agricultural practice of the State, and there is a very great scope for their extended use and consequent increase of agricultural production in this country.

In this connection, a few general principles relating to agriculture in Germany may be of interest and use to us as well.

We all know that Germany had a very intensive system of agriculture before the Great War. This development took place gradually between 1890 and 1913. During that period, the yield of corn (rye) per acre increased by 61 per cent and that of potatoes by 56 per cent. During the same period, the use of artificial manures also increased enormously. Their application rose from 32,000,000 cwts to 214,000,000 cwts *i.e.*, an increase by nearly 600 per cent.

The bulk of the artificial manures was imported from abroad and supply was naturally cut off soon after war broke out in 1914. As a consequence of this and other factors, the crop yields during 1913-19 went down considerably. The acre yields of corn decreased by 21 per cent and of potatoes by 31 per cent.

We all know that increase in crop yields can be brought about not only by manuring, but also by the introduction of better seed and improved implements of tillage. Of the increase that can be brought about by a combination of all these factors, it is estimated that 50 per cent is due to manure, 30 per cent to higher yielding varieties of seed and 20 per cent to cultural operations. Of all the factors under our control for the increase of agricultural production, that of manuring is said to be the most important.

According to the experience of agricultural chemists in Germany, there are certain conditions affecting the utilisation of nitrogenous and phosphatic manures, when they are applied together. Only 60 per cent of the nitrogen applied and 10 per cent of the soluble phosphoric acid seem to be used up by a crop, and the application of nitrogen and phosphoric acid in the ratio of 1 : 3 has been found to be the most favourable for plant growth and this seems to have been the ratio in which nitrogenous and phosphatic manures were being imported into Germany before the war.

The ratio of 1 : 3 found useful in Germany with regard to nitrogen and phosphoric acid does not seem to hold good for our conditions. Preliminary experiments have indicated that a ratio of 2 : 3 is likely to be more useful here.

The following is a good example as to how even absentee landlords may get more profit out of their lands than they are doing at present. Based on results of pot and plot experiments, a large field scale manurial experiment with paddy was undertaken in 1924-25 on a plot of 25 acres near Hampapur, the landlord himself generously consenting to bear the entire cost of manure. The land has been recently brought under irrigation and for want of sufficient quantities of farm-yard and green manure, the yield from 25 acres of land in question amounted only to 6,400 seers of paddy in 1923-24. The same area under manurial treatment in 1924-25 gave an yield of 19,400 seers of paddy with its corresponding increase of straw as well. The yield had more than

trebled itself. The cost of manure applied worked out to Rs. 25 an acre or Rs. 625 for the whole area. The value of increased yield of grain alone was about Rs. 1,100, thus bringing in a profit of Rs. 500 in addition to the value of increased yield of straw.

The lands having been cultivated on the share system, the profits of the landlord have been materially reduced as he had to bear the whole cost of manure, whereas, the raiyats got a good profit without any investment on their part. Anyhow, that is a matter to be mutually agreed upon between landlord and tenant. Quite satisfied with the results of last season, the landlord has again manured the lands with artificials during 1925-26 also.

Since the close of the War, Germany seems to be getting more and more independent of foreign sources with regard to the supply of nitrogenous manures. But she is still mostly dependent on foreign supplies for phosphates and research in the direction of making herself independent of such foreign supplies has brought to light some interesting facts. The German scientists found that 40 per cent of their soils still respond clearly to phosphatic manures, 20 per cent in an indifferent manner, and remaining 40 per cent not at all. In trying to find out the reason for this want of response, it was found out that soils rich in silicic acid did not respond to phosphates. Further researches have shown that silica is partly capable of displacing phosphoric acid in plant nutrition. To be effective, the silica is to be given in a finely divided state.

The fact that soils rich in silica did not adequately respond to phosphatic manuring had previously been observed at Rothamstead in England, but the reason then given for it that silica liberated phosphoric acid from the soil is not found to be satisfactory now.

Even with us, while there are very few soils which do not respond to nitrogenous manures, there seem to be a few types which do not appear to respond to phosphates. It is with reference to manurial requirements of such soils that the above referred to researches in Germany may give a clue to us.

HARVESTING GROUNDNUTS.

A new use for the Stone Threshing Roller.

One of the main difficulties in connection with the cultivation of the groundnuts in our State is the high cost of harvesting. Practically the whole of the groundnut crop of our State is raised as a dry crop sown about July and August and harvested in November and December. By the time the crop is ready for harvest the rains cease and the ground becomes hard, and as the crop has to be harvested by digging, the work is both difficult and expensive. It is only in exceptional years that rains favour the raiyat about this time and the work is rendered comparatively easy; or where the early-maturing and erect-growing varieties like the Small Japan or Spanish varieties are grown, as is now being done very extensively in certain parts of the State such as the Davangere and Nanjangud taluks, the difficulty is also not so great. These varieties are however not fancied everywhere, and compared with the total area

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges	Nakshatrams in Ghalig and Vighaliges
					SRAVA
	1	Wednesday.	10	Dasami .. 51 48	Mrigasira .. 10 4
	2	Thursday ..	11	Ekadasi .. 53 35	Aridra .. 13 2
	3	Friday ..	12	Dvadasi .. 56 22	Punarvasu .. 17
	4	Saturday ..	13	Trayodasi .. 59 58	Pushya .. 21 4
	5	Sunday ..	14	Chaturdasi .. 60 10	Aslesha .. 27
	6	Monday ..	14	Chaturdasi .. 4 12	Makha .. 32 5
M.	7	Tuesday ..	30	●Amavasya .. 8 48	Pubba .. 38 5
					BHADRAPAI
	8	Wednesday.	1	Padyami .. 13 21	Uttara .. 44 5
	9	Thursday ..	2	Bidige .. 17 39	Hasta .. 50 2
H.	10	Friday ..	3	Tadige .. 21 29	Chitta .. 55 2
G.	11	Saturday ..	4	Chouti .. 24 32	Svati .. 59 3
	12	Sunday ..	5	Panchami .. 26 38	Visakha .. 60 1
	13	Monday ..	6	Shashti .. 27 36	Visakha .. 2 2
	14	Tuesday ..	7	Saptami .. 27 23	Anoradha .. 4 2
	15	Wednesday.	8	Ashtami .. 25 54	Jeshta .. 5
	16	Thursday ..	9	Navami .. 23 11	Moola .. 4 3
	17	Friday ..	10	Dasami .. 19 21	Poorvashadha .. 2 5
	18	Saturday ..	11	Ekadasi .. 14 33	Uttarashadha .. 0 1
					Sravana .. 56 3
	19	Sunday ..	12	Dvadasi .. 8 57	Dhanishta .. 52 3
H & M.	20	Monday ..	13-14	Trayodasi .. 2 48	Satabhisha .. 47 5
				Chaturdasi .. 53 32	
	21	Tuesday ..	15	○Pournami .. 49 44	Poorvabhadra .. 43 1
					BHADRAPAD
	22	Wednesday.	1	Padyami .. 43 26	Uttarabhadra .. 38 5
	23	Thursday ..	2	Bidige .. 37 38	Revati .. 34 5
	24	Friday ..	3	Tadige .. 32 35	Asvini .. 31 4
	25	Saturday ..	4	Chouti .. 28 27	Bharani .. 29 2
	26	Sunday ..	5	Panchami .. 25 27	Krittike .. 28 1
	27	Monday ..	6	Shashti .. 23 37	Rohini .. 28 9
	28	Tuesday ..	7	Saptami .. 23 3	Mrigasira .. 29 2
	29	Wednesday.	8	Ashtami .. 23 42	Aridra .. 31 4
	30	Thursday ...	9	Navami .. 25 30	Punarvasu .. 35 1

MONTHLY NOTES.

The early *mungar* crops sown in the *bharani* rains become ready for harves towards the latter part of the month; after harvest, plough these lands and prepare them for a second crop (*vide* notes under May for list of crops thus to be sown).

It should be noted that from this month onwards till the close of the year green fodder is in full flush. The manure, principally the urine from the animals

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
BAHULA.		
Vajra ..		
Siddhi ..	Smartha Ekadasi.	
Vyatipata ..	Vaishnava Ekadasi and Pubba Rain 2nd pada.	Paddy is liable to attack by stem borer from this month up to November. The shoot is killed by a caterpillar, which bores into it. The plants attacked will have the shoots withered. The caterpillars turn into moths. The moths lay eggs in masses, covered by golden hairs, on the leaves. These are easily seen and should be hand-picked and destroyed. Light traps (hurricane lanterns placed in a basin with a little water and kerosene) kept in the field at a height of 4 feet from the ground, will attract and kill the moths. If these measures are not adopted, 10 to 20 per cent of the crops may be destroyed. Weeds also must be removed. Pest common in the Mysore District.
Varigha ..		
Parigha ..		
Siva ..	Pubba Rain 3rd pada.	
Siddha ..	Akhiri Charshumba.	
SUDDHA.		
Sadhya ..		
Subha ..	Pubba Rain 4th pada and Samavedopakarma.	
Sukla ..	Gauri Feast.	
Brahma ..	Ganesha Feast.	
Mahendra ..	Rushipanchami.	
Vaidruti ..	Uttara Rain 1st pada.	
Vishkambha ..		
Preeti ..		
Ayushman ..		
Sowbhagya ..	Uttara Rain 2nd pada.	
Sobhana ..		
Atiganda ..	Vamanajayanti.	
Sukarma ..		
Dhriti ..	Birthday of Mahomed. Anantha Chaturdasi.	
Soola ..	Uttara Rain 3rd pada.	
BAHULA.		
Ganda Vriddhi ..		
Dhruva ..	Uttara Rain 4th pada.	
Vyaghata ..		
Harsha ..	Maha Bharani.	
Vajra ...		
Siddhi ...	Hasta Rain 1st pada.	
Vyatipata ...		
Varigha ..	Madhyashtami.	
Parigha ..	Hasta Rain 2nd pada.	

is very valuable during this period, much more so than during the hot months or early rains when all animals, except those in milk or working bullocks are practically on starvation rations. Special care should be taken to see that all the urine from the stalls finds its way into the manure pit.

Towards the end of this month, on well-drained wet lands and garden lands, Cambodia cotton may be sown.

under the spreading long season varieties, they hold at present only a very subordinate position. The difficulty of the problem of harvesting continues therefore as a serious drawback in groundnut cultivation. As is well-known, from one-third to one-sixth of the crop is paid as harvesting wages and this in a year of good prices means a very substantial sum. Furthermore the main food crop, *viz.*, ragi also comes to harvest at about the same time and as, for obvious reasons, the harvest of the ragi cannot be delayed, the groundnut crop has to remain in the ground until the ragi harvest is finished, the conditions for groundnut harvesting having become harder in the meantime. The digging expense then increases proportionately and even $\frac{1}{2}$ of the crop will have to be paid. Cases are also not uncommon where the crop has had to be left in the ground until the advent of the early rains of the next season.

Special harvesting tools such as the plough itself, or the special groundnut-digging *kunte* with a steep angle used in certain parts of Bombay-Deccan, are out of the question and so are also the special groundnut harvesters—small enough for bullock-draft as American or other foreign pattern. These are all devised mainly for expediting the work and to replace manual labour and require a fairly soft workable condition of the soil. It would appear therefore that no better method can be thought of than the laborious and expensive method of digging the ground by means of hand labour.

In the stone threshing-roller now being almost universally used in the Eastern Districts, we have fortunately an implement which can be made use of to lighten the work of groundnut harvesting, and this note is written with a view to bringing this new use of the roller to the notice of such raiyats as may not be aware of it.

The primary need in groundnut harvesting is the softening and loosening of the soil to some extent; if this is done then the digging work, either by manual labour or by means of bullock implements, is rendered easy. The stone threshing roller when drawn over the hard groundnut field has the effect of loosing the top layer of the soil; it may appear rather surprising but on the red loamy soils of the kind predominant in these tracts, this loosing effect of the roller is remarkable and the relief afforded thereby is very material. The soil after it has been worked over by the roller is left in such a condition that the digging work is rendered possible by means of the small hand hoe (*Kai-Gudali*). The harvesting can be made more expeditious and cheaper by the use of a six shovel cultivator (K. M. Cultivator) to work after the stone roller has passed once over the ground, as the breaking up of the surface and loosening by the roller is such as to permit of the use of this cultivator. There are already many raiyats who have been adopting this method in years when the soil becomes hard and digging becomes very expensive and have thereby been reducing the cost of the harvesting very materially. The method has been explained here, so that raiyats elsewhere may be prepared to meet a similar situation as regards groundnut harvesting.

The extension of the cultivation of the groundnut in recent years is probably the most noteworthy feature of our agriculture; the present area is over 100,000 acres and it bids fair to extend much more largely, as our raiyats find in it an excellent and readily saleable money crop, with prices too on the whole very encouraging. Any little device to remove one of the chief difficulties in its cultivation is worthy of consideration and it is hoped the harvesting methods described above will be found applicable to many tracts in the State.

BLACK ROT OR KOLEROGA OF COFFEE AND ITS CONTROL.

The most serious fungoid disease of Coffee in Mysore in estates with a comparatively high elevation is Koleroga or Black Rot, caused by the fungus *Corticium koleroga*. The disease makes its appearance soon after the heavy rains of the south-west monsoon, about the middle of June, and goes on spreading from plant to plant till the end of the monsoon. The leaves and the twigs are first attacked and finally the berries. The fungus is confined to the under surface of the leaves but the affected portions of the twigs and berries may be completely enveloped. The fungus is weblike to the naked eye (See Plate III) and leads a superficial existence, absorbing food from the external regions. When dry the web is shiny, but when moistened by rain or mist is unrecognisable from the general surface. The web may be easily peeled off by the fingers. The affected tissues gradually get weakened on account of the loss of sap. In July-August the leaves turn black and hang vertically downwards from the twigs, attached to them by means of the thin web. (See Plate II). Later they drop down. About this time the berries also begin to turn black and drop down. The general appearance of the plant at this stage is a mass of black rotting leaves and berries, whence the name of the disease. In many estates it is only at this stage, when the fungus has done its worst, that the disease is recognised by the owners. The disease is very bad in areas of heavy rainfall, and in places where mist hangs on the plants for a greater portion of the day. Since excess of moisture is necessary for the fungus, and since shade tends to conserve moisture, the disease gains a foothold easily in the thickly-shaded portions of the estate. Sunshine is harmful to the fungus. If the sun shines for a few days at a stretch after a heavy rain the disease receives a check in its spread. Consequently in years of very low rain-fall, as in 1918, the effects of the fungus are negligible.

The fungus is spread by means of very minute bodies present in large numbers on the web, the spores. These get distributed by the driving wind. The same fungus develops on a number of wild plants growing in coffee estates or round about them, so that in tackling this disease, some attention should also be paid to destroy these plants. After the rains the fungus rests in the fallen leaves and berries in the form of compacted portions of the web. These are able to withstand the heat of summer. They germinate after the early rains of the next year.

The loss incurred on account of this disease is variable according to the rainfall and the condition of the estate in point of general sanitation. Losses from about 25 per cent to 50 per cent of the crop are freely admitted by the estate managers although no attempts are made to obtain accurate statistics. Besides the loss of crop, the deterioration of the wood for the next year is quite marked. Hence in badly affected portions of estates the bloom for the next crop is scanty and the setting of berries uneven.

The only control method adopted in most estates is handling. The dead and hanging leaves are picked off and the plant is given a vigorous shaking to scatter the rotten berries. No pains are taken

Holidays	English Dates	Days of week	Chandramana Dates	Tithies in Ghaliges and Vighaliges		Nakshatrams in Ghaliges and Vighaliges	
							BHADRAPADA
	1	Friday ..	10	Dasami	.. 28 21	Pushya	.. 39 37
	2	Saturday ..	11	Ekadasi	.. 39 2	Aslesha	.. 44 50
	3	Sunday ..	12	Dvadasi	.. 36 18	Makha	.. 50 34
	4	Monday ..	13	Trayodasi	.. 40 55	Pubba	.. 56 35
	5	Tuesday ..	14	Chaturdasi	.. 45 35	Uttara	.. 60 10
G.	6	Wednesday.	30	● Amavasya	.. 50 2	Uttara	.. 2 31
							ASVIJA
G.	7	Thursday ..	1	Padyami	.. 54 0	Hasta	.. 8 10
	8	Friday ..	2	Bidige	.. 57 13	Chitta	.. 13 16
	9	Saturday ..	3	Tadige	.. 59 28	Svati	.. 17 3
	10	Sunday ..	4	Chouti	.. 60 10	Visakha	.. 20 52
	11	Monday ..	4	Chouti	.. 0 16	Anoradha	.. 23 2
	12	Tuesday ..	5-6	Panchami	.. 0 7	Jeshta	.. 24 1
				Shashti	.. 58 56		
	13	Wednesday.	7	Saptami	.. 56 22	Moola	.. 23 56
	14	Thursday ..	8	Ashtami	.. 52 32	Poorvashadha	.. 22 21
	15	Friday ..	9	Navami	.. 47 42	Uttarashadha	.. 19 52
	16	Saturday ..	10	Dasami	.. 42 5	Sravana	.. 16 30
G.	17	Sunday ..	11	Ekadasi	.. 35 56	Dhanishta	.. 12 28
	18	Monday ..	12	Dvadasi	.. 29 31	Satabhisha	.. 8 1
	19	Tuesday ..	13	Trayodasi	.. 23 4	Poorvabhadra	.. 3 54
						Uttarabhadra	.. 55 25
	20	Wednesday.	14	Chaturdasi	.. 16 51	Revati	.. 54 40
	21	Thursday ..	15	O Pournami	.. 12 9	Asvini	.. 52 14
							ASVIJA
	22	Friday ..	1	Padyami	.. 7 10	Bharani	.. 49 42
	23	Saturday ..	2-3	Bidige	.. 2 6	Krittike	.. 47 12
				Tadige	.. 56 43		
	24	Sunday ..	4	Chouti	.. 57 6	Rohini	.. 46 52
	25	Monday ..	5	Panchami	.. 56 40	Mrigasira	.. 47 46
	26	Tuesday ..	6	Shashti	.. 57 27	Aridra	.. 49 53
	27	Wednesday.	7	Saptami	.. 59 24	Purnarvasu	.. 53 8
	28	Thursday ..	8	Ashtami	.. 60 0	Pushya	.. 57 22
	29	Friday ..	8	Ashtami	.. 2 37	Aslesha	... 16 10
	30	Saturday ..	9	Navami	.. 6 10	Aslesha	... 2 35
	31	Sunday ..	10	Dasami	.. 10 10	Makha	.. 8 13

MONTHLY NOTES.

The month for the sowing of the *hingar* crops, such as *hingar* jola, the various grams, coriander, wheat, cheap grains like *baragu* or *same*, etc., on dry lands.

On wet and garden lands, potatoes, Cambodia cotton and the various garden crops can be sown.

In some parts of the State this is also one of the seasons for the planting of

Yogams	Feasts, Festivals, Government Holidays and Rainfall according to Nakshatrams	Dates of Cattle Fairs, Cattle Shows and Agricultural Exhibitions and other useful notes
AHULA.		
iva ..		
iddha ..		
adhya ..	Hasta Rain, 3rd pada.	
ubha ..		
ukla ..		
rahma ..	Mahalaya Amavasya.	
UDDHA.		
Iahendra ..	Hasta Rain, 4th pada	
aidruti ..	Commencement of Dasara.	
ishkambha ..		
reeti ..	Chitta Rain, 1st pada.	
yushman ..	Lalita Panchami.	
owbhagyam ..	Dasara Holidays from 12th to 22nd October.	
obhana ..	Chitta Rain, 2nd pada, Sarasvati pooja.	
tiganda ..	Durgashtami.	
ukarma, Dhriti ..	Maha Navami.	
oola ..	Vijaya Dasami.	
anda ..	Chitta Rain, 3rd pada.	
riddhi ..		
Dhruva ..		
yaghata ..	Chitta Rain, 4th pada.	
Iarsha ..		
AHULA.		
ajra, Siddhi ..		
yatipata ..	Svati Rain, 1st pada. Car Festival, Chamundi Hills, Mysore Taluk.	
arigha ..		
arigha ..		
iva ..		
iddha ..	Svati Rain, 2nd pada.	
adhya ..		
ubha ..		
ukla ..	Svati Rain, 3rd pada.	
ramha ..		

ugar-cane ; this is done under tanks which are known to get very good supplies lmost unfailingly during the heavy *hasta*, *chitta* rains of this month, which will arry the crop through the hot months, when the cane will be in full growth nd would require heavy irrigation. This planting has the advantage of enabling he raiyat to mill cane long before the general milling season begins, and to put aggory on the market when prices rule high—(*vide* notes under April in *re* seed etts for planting).

to remove the infected material out of the estate, nor to destroy it. Needless to say that this is only an imperfect method as all the affected leaves and berries are not removed from the plant; rather, it is impossible to do this, as the fungus may yet be in the initial stages of development without the leaves and berries beginning to rot and turn black. It should also be noticed that the infected leaves and berries are left on the ground for the fungus to recoup its energy and make a much more vigorous attack during the coming season.

A more reasonable method of controlling the disease is by means of spraying fungicidal substances in the form of solutions in water, or dusting powders on to the plants. It is not necessary that the whole area of an estate should be sprayed. The portions that get the disease in its worst form may be tackled first, and by a careful system of division of the estate into blocks, and a systematic rotation it is possible to adjust the spraying operations so that the loss is reduced to a minimum. All this will be governed by the availability of men and machines for work.

The spraying operation consists in covering the plants well before the disease is due to appear, with a solution which prevents the fungus from developing and infecting the plant. Consequently the fungus has no chance or very little chance of developing. The operation itself is done by means of a pressure pump called a 'sprayer.' This method then is different from that of picking the infected leaves and shaking out the berries, in that it provides no room for the spread of infection, much less for the appearance of the fungus in the next season.

The spraying mixture employed against this disease is known as Bordeaux mixture. It consists of copper sulphate and lime in certain proportions, together with an adhesive to make the mixture withstand the heavy rains. A stronger mixture like that used against areca koleroga was used in the beginning, but it has been found that the weaker mixture will do quite as well. The only thing to be remembered is that the spraying must be done in good time and so perfectly as not to leave any portions unprotected with the mixture. The mixture is prepared as follows:—

Two and a half lbs. of copper sulphate are tied in a coarse cloth or gunny bag and suspended in a wooden, earthenware, copper, or brass vessel containing 48 seers (12 gallons) of water, but capable of holding 100 seers or 25 gallons of water. Iron or zinc vessels should not be used, but they may be used for slaking lime. Two and a half pounds of quicklime (good stone-lime) are slaked first with a small quantity of water to make it into a paste, and when it has slaked well, more water is added to make it up to 48 seers (12 gallons). When the copper sulphate has all dissolved, this lime water is slowly added to the copper sulphate solution attended by constant stirring. The mixture thus made must be of a sky-blue colour. If it is well made neither copper sulphate nor lime is in excess. Usually the copper sulphate is likely to be in excess, as lime is apt to contain stones. Excess of copper sulphate may be detected by dipping the polished blade of a knife into the mixture when, after a time, the dipped end will receive a coppery deposit and appear red in colour. If this happens more lime solution should be added to it, till a polished knife blade does not take the copper deposit.

PLATE II.

Coffee leaves attacked by the Black rot fungus. (Corticium koleroga). The second leaf from the base, on the left has become detached and is suspended by the web of the fungus. Above this leaf the web has got displaced and is seen running from the twig to the surface of the third leaf above. (A).